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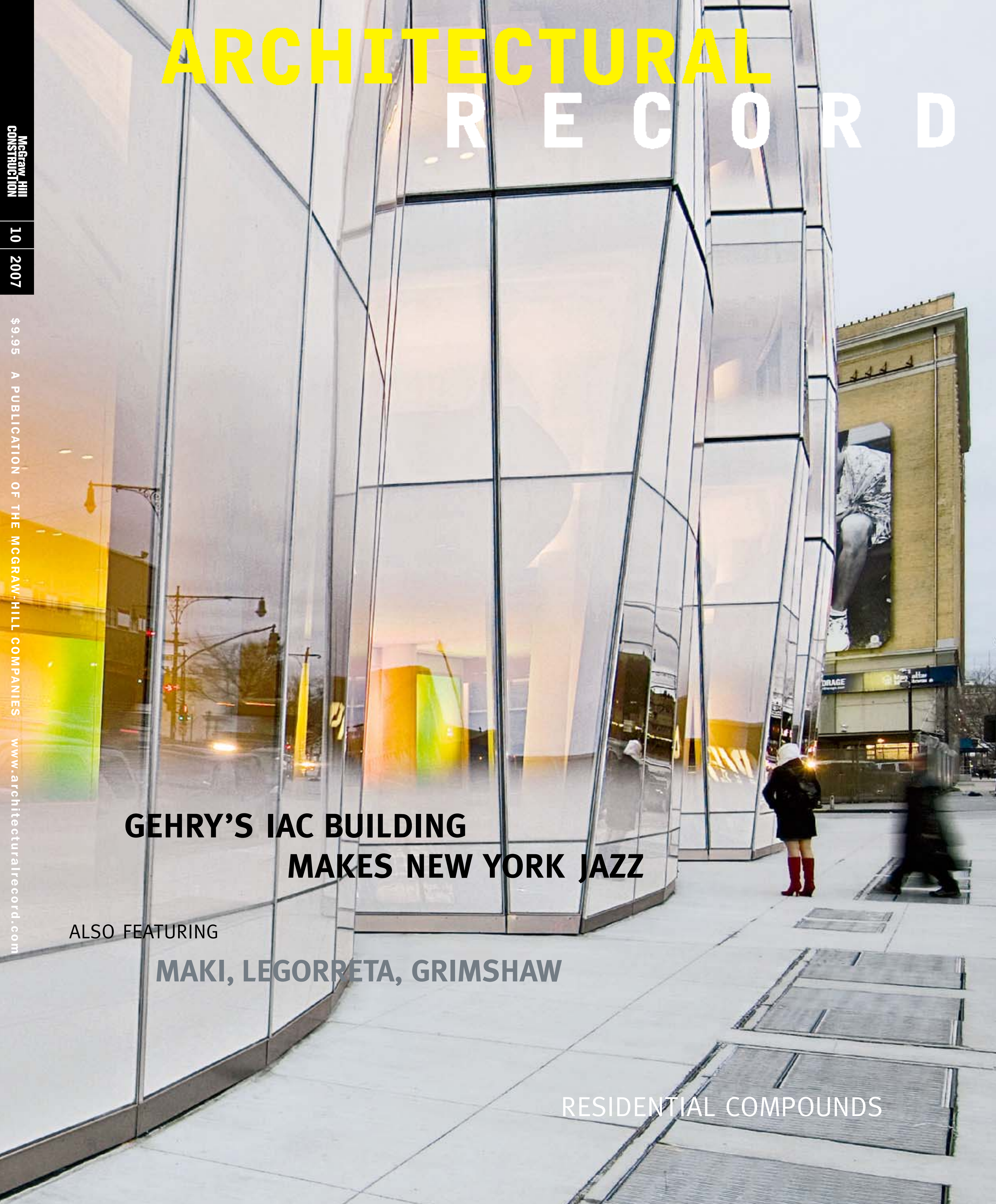

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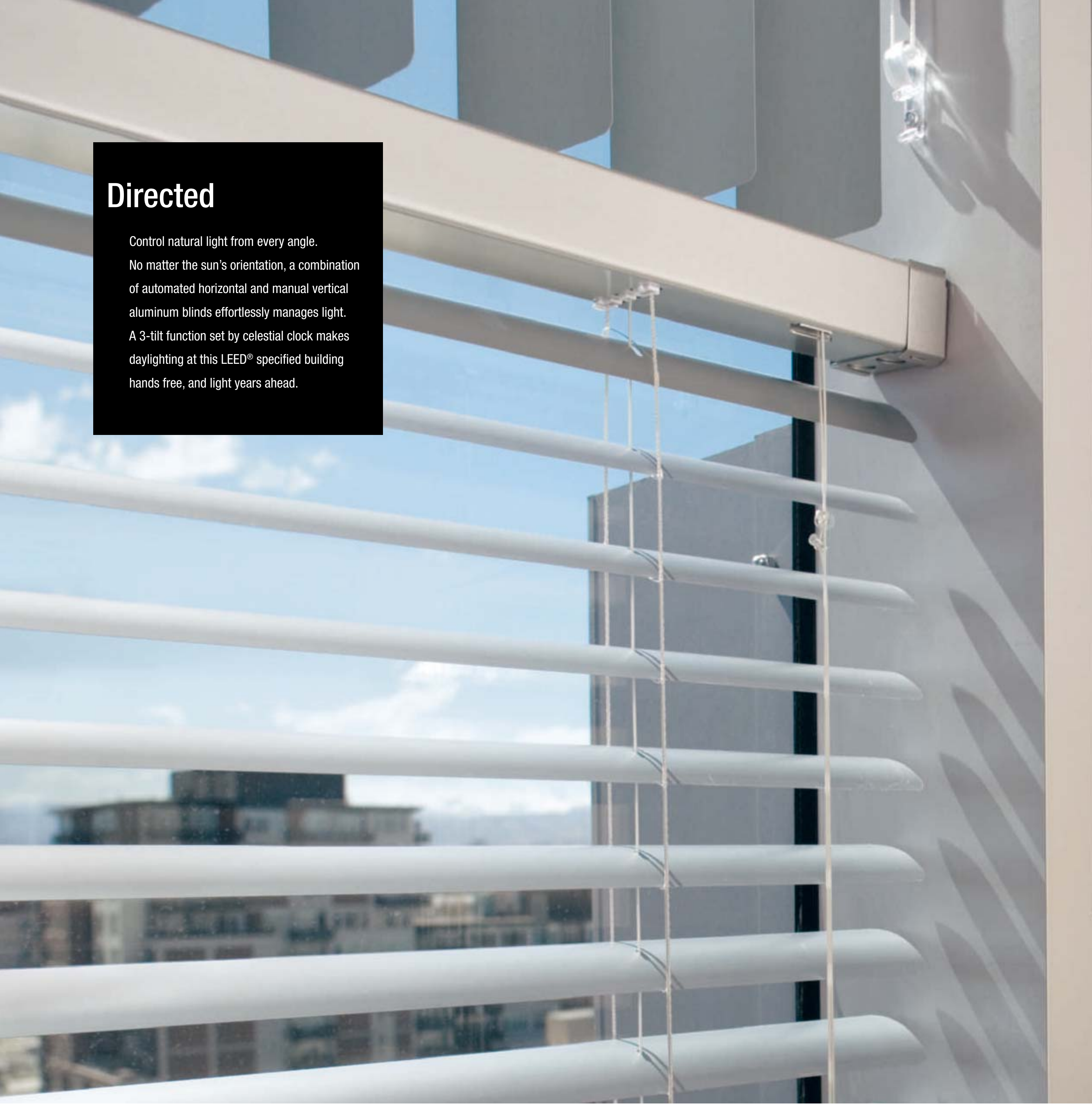

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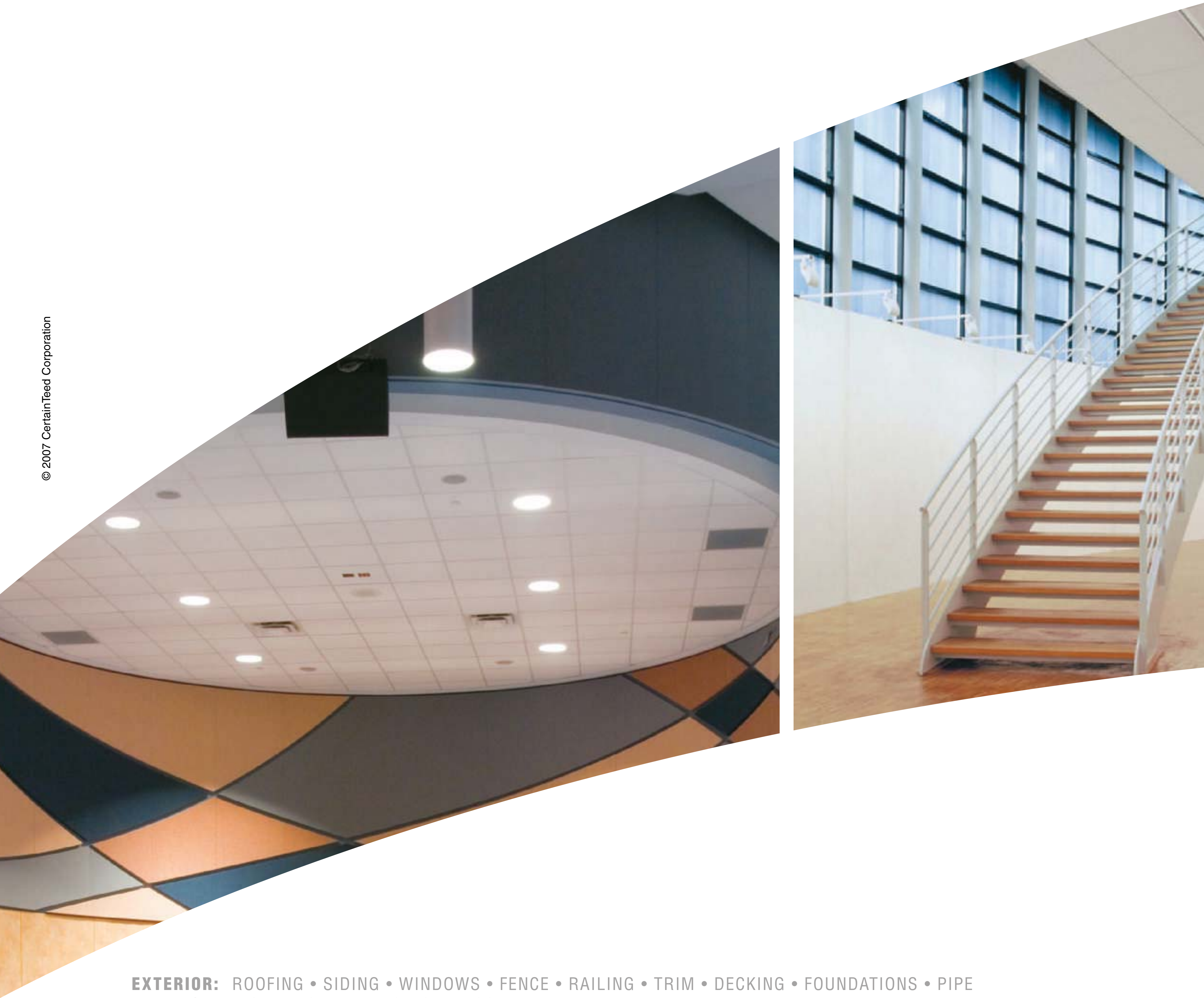

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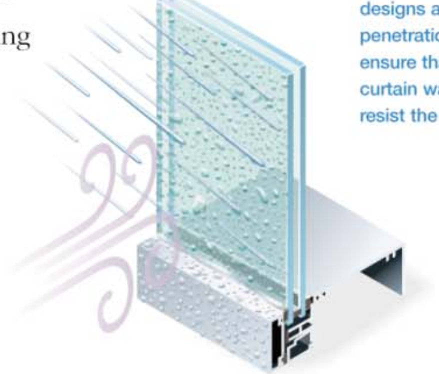

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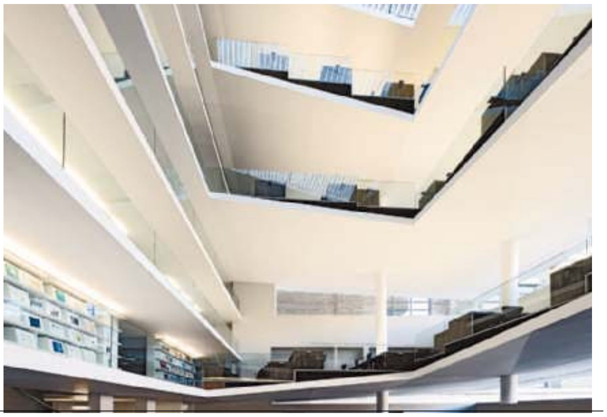

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building types study: design hotels

The proliferation of design hotels continues unabated, and from edgy to luxurious, grandly Minimal to showy, design is playing a major role. With slide shows and product information, we feature seven, from Mexico to Turkey, designed by architects including Legorreta + Legorreta (La Purificadora, left), Pelli Clarke Pelli, and SOM with Yabu Pushelberg.

project portfolio

From Fumihiko Maki's stunning Sam Fox Arts Center in St. Louis, Missouri (left), to British firm Grimshaw Architects design-intense Caixa Galicia Foundation cultural center in Spain, architects are crossing borders and exploding boundaries of design while respecting context, as these four projects show.

residential section: compounds

View slide shows, listen to a podcast, and discover three modern-day compound dwellings that exhibit groups of residential buildings created with timeless design intelligence, such as Lake Tahoe House, by Lake/Flato Architects (left).

community

photo gallery

View more than a thousand images submitted by readers from all over the world in 10 categories, such as the Architectural Photographers Showcase (above). You can also send us your own photos at construction.com/community/gallerylist.aspx.

blogs

Off the Record: Written by the staff of RECORD and the magazine's team of experienced, award-winning editors, who offer their insightful, informal, opinionated takes on architecture-related trends, conferences, exhibitions, projects, and personalities.

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residential: house of the month

Exclusively online: Continuing with our special residential section's exploration of compound dwelling, we feature a house by Max Levy Architect (below), comprising a group of small cabins in east Texas (a total of 3,000 square feet) that effortlessly interact with their site while providing the owners with breezy, comfortable living spaces.

archrecord2

This month, we catch up with the coasts, profiling two talented young firms—Oyler Wu Collaborative (live/work loft, below) and Associated Fabrication—that are leaving their design stamps on New York, Los Angeles, and beyond. Catch other emerging talent in archrecord2's Design, Work, and Live sections online, and leave your own mark in Talk, where you can comment and join forums.

continuing education

Get CE credits by reading editorial articles and sponsored sections online. This month, our editorial opportunity explores how the designers of public-sector emergency-response buildings are eschewing the bunker image and incorporating transparency, sustainability, and state-of-the-art technology.

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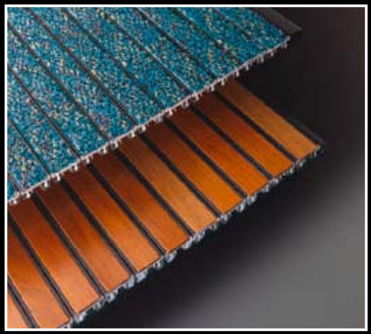

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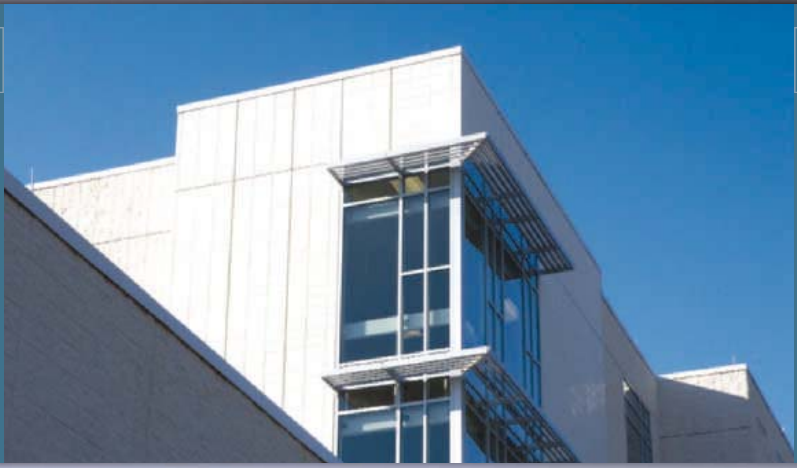

2

1 Michigan Avenue Tower, Chicago

2 The School of the Future, Philadelphia

3 TWELVE Atlantic Station, Atlanta

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Architectural diplomacy

Editorial

By Robert Ivy, FAIA

The phrase "skin deep" applies to many architectural award programs in this country. One program, however, stands resolutely outside these compromises. For 30 years, the Aga Khan Award for Architecture has looked at architecture in a more holistic way. Since the program's founding in 1977, process, rather than building-as-object, has dominated the awards program. Limited in scope to a three-year cycle, the Aga Khan Award for Architecture examines submissions from a worldwide network of nominators (including the editor in chief of ARCHITECTURAL RECORD), narrows the field to a manageable number, then sends out professionals to visit the projects, whether in major cities, rain forests, or desert towns. They prepare exhaustive evaluative documents, explaining how intentions play out in real sites for real people, and thus provide a fact-based analysis for a master jury, composed of sociologists, philosophers, and artists, as well as architects—a diverse group that makes the final selections.

For this year's awards, the 10th cycle conducted by the awards program, nine projects emerged from the rigorous routine. In virtually every case, a narrative accompanied the winners that explained the scope of accomplishments: No single image would suffice. As a poignant example, one award went to the Rehabilitation of the Walled City of Nicosia, in Cyprus. Winners included representatives of the Greek Cypriot and Turkish Cypriot Communities, who overcame political enmity and boundary disputes in 1979, when they met to devise a master plan for the historic city. All involved, including architects, planners, and the mayors of opposing sides of a physical wall, realized that their beloved home city was too valuable to lose. The resulting cooperation "has been successful in reversing the city's physical and economic decline." What other program would recognize such courageous heroism?

In early September of this year, representatives of all nine winning projects flew to Kuala Lumpur, the capital of Malaysia, to dress in native finery and receive their hard-earned honors in the Petronas Concert Hall, housed in the Cesar Pelli–designed complex—itself honored in 2004. In personal attendance, and speaking to the assemblage, His Highness the Aga Khan underscored the principles outlined in his eponymous program, served as host for the awards ceremony, and opened subsequent seminars exploring the meaning of the winners within the context of the program and the larger world. As chairman of the steering committee that governs the awards program, the Aga Khan has personally involved prominent academics and other thinkers, artists, and architects, such as the late Hassan Fathy, Fumihiko Maki, Frank Gehry, and Charles Correa, who have helped him set the agenda for each cycle of the awards.

This individual, who embodies moral qualities in real life as spiritual leader, or Imam, of the Ismaili Muslims, has spent 50 years of leadership doing good things: 2007 marks his Golden Jubilee. While it might seem easy to dismiss a privileged leader of 15 million people born to wealth and influence, Prince Karim Khan, born in 1936 in Geneva, Switzerland, did not seek his role, as Philip Jodidio points out in his recently released authorized biography of the prince. Instead, he has worked hard to put his gifts and powers to positive uses. Since assuming the mantle as Aga Khan in 1957, he has exercised broad-ranging intelligence, concern, and (to our community of architects) an enlightened belief in the power of architecture to change the world for the better. Uniquely, through the Aga Khan Development Network, he has harnessed that belief to the necessary social and economic forces, combined with the lessons of history, to make decided improvements. At this fractious global moment, voices of reason and hope particularly deserve our admiration and respect.

Why should non-Muslims care? While his focus has rightly been on building within his own Ismaili community, which is far-flung, he nevertheless has reached out to improve the lot of all Muslims, and by extrapolation, the world. In addition to his economic development work, he maintains an active historic-cities program, sponsoring restoration and new projects in Cairo; in Mostar, Bosnia and Herzegovina; in embattled Kabul, Afghanistan; and in Zanzibar, Tanzania, among others. His program for Islamic Architecture at Harvard and the universities that bear his name in Pakistan, London, and Central Asia offer college educations to a new generation of young Muslims.

How refreshing, at a time of international cynicism and cultural fascination with the superficial, of celebrity and instant gratification, that someone recognizes the deeper power of architecture, and how gratifying for architects and planning professionals that someone recognizes architecture's defining abilities, even to foster international understanding. Honor awards can merely create new generations of architectural celebrity, but if carefully conceived and executed, like the Aga Khan Awards for Architecture, they can articulate values for the larger society. ARCHITECTURAL RECORD salutes the 10th cycle of the Aga Khan Award for Architecture, and to H.H. The Aga Khan, we wish you 50 more productive years. Asalamu alaykum.

Robert Ivy

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Letters

AOC speaks

Regarding your article about the search for a new AOC [September 2007, page 48], as the 10th Architect of the Capitol (AOC), I referred to the responsibilities of the office as a magnificent challenge. The Congressional Accountability Act mandated that starting in 1997 the legislative branch of government comply with OSHA, ADA, and laws relating to fire and life safety. Much was accomplished across the 15 million square feet of Congressional buildings, but billions of dollars of work remains to bring these historic facilities into the 21st century. Your article said that, under my leadership, the cost of the Capitol Visitor Center doubled due to changes in the building's program after 9/11. A nonarchitect would have far greater difficulty controlling the overall budget and schedule when faced with $200 million in scope increases to an ongoing project. I respect and understand Congress's concern about this very complex project, but such frustration should not impact the selection of the next AOC. The appointment of a nonarchitect is potentially harmful to health, safety, and welfare concerns across the Hill, as well as the stewardship, historic preservation, and design sensibilities that are so critical to our nation's Capitol.

—Alan M. Hantman, FAIA
Washington, D.C.

Another opinion

Sylvia Lavin's critique of the Federal Building in San Francisco [August 2007, page 106] was erudite but, unfortunately, esoteric, missing an opportunity to engage the reader. The Federal Building is an extraordinary design, establishing new paradigms for office buildings (governmental or otherwise). In this example lay an abundant opportunity for critique, perhaps with insight for how architecture can (or cannot) create momentum and change thinking within the realm of often-oppressive bureaucracies. Critique, I believe, is of most value when it provokes thinking that compels spirited dialogue, which is the genuine catalyst for change. Opinion pieces that dwell on the philosophical and are articulated in arcane language are best published in academic journals.

—Charles A. Higueras, AIA
Oakland

Corrections

An article on the Museum of Contemporary Art San Diego's renovation of the Santa Fe Depot baggage building [June 2007, page 134] incorrectly described the building as "long shuttered." In fact, the Southwest Railway Museum Association housed its library in part of the structure for about a decade. An August article on the Sports City Tower [page 146] incorrectly indicated that the building is located in Doha, Qatar, United Arab Emirates. Qatar is not one of the seven emirates that make up the federation of the United Arab Emirates. A September feature on high-tech hospitals [page 151] incorrectly referred to the "Health Information Patient Privacy Act." It should have been the Health Insurance Portability Accountability Act.

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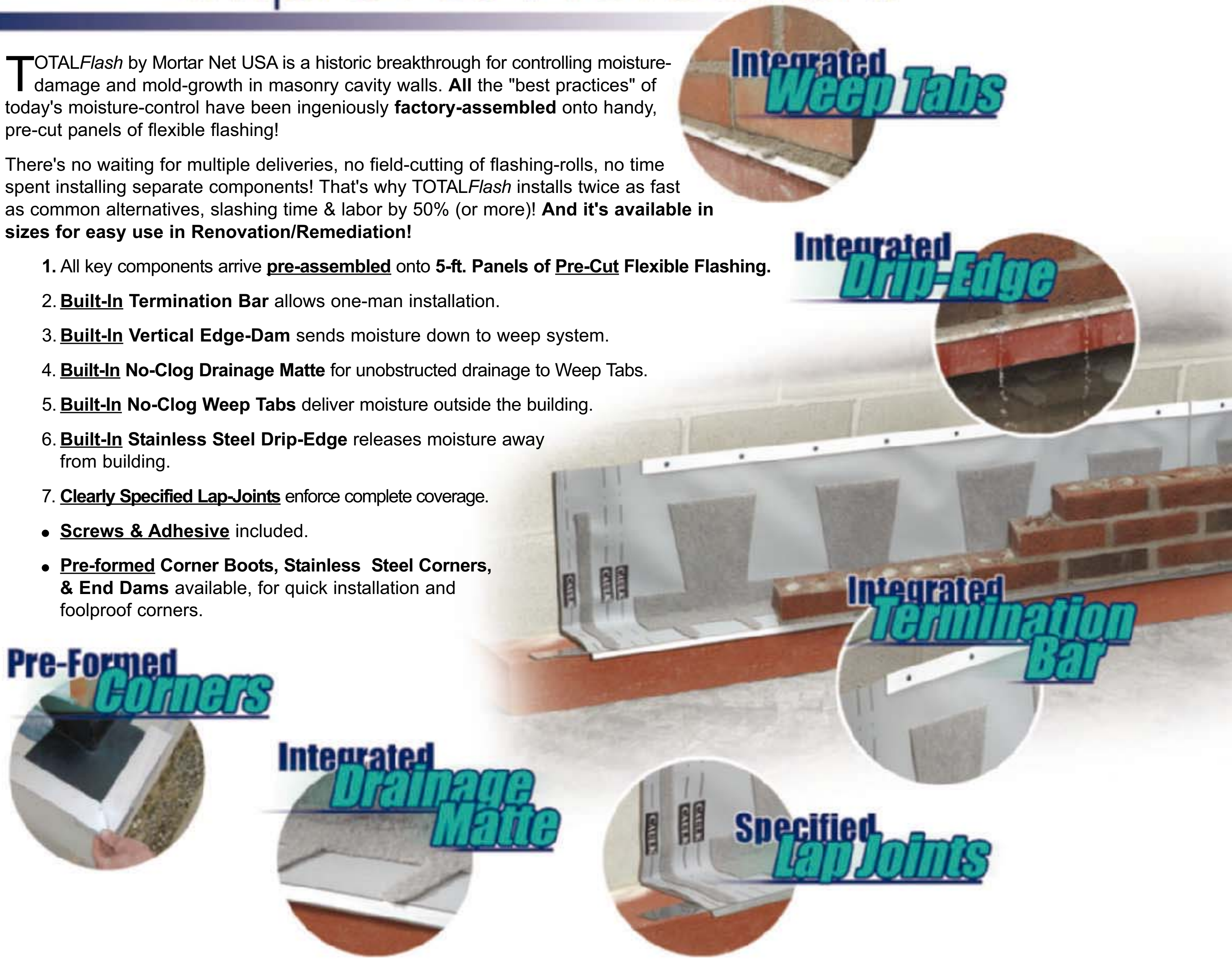

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Record News

Inside the News
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p.49 **Foster makes giant leap in space tourism**
p.50 **Can architects help fix "busted budgets"?**

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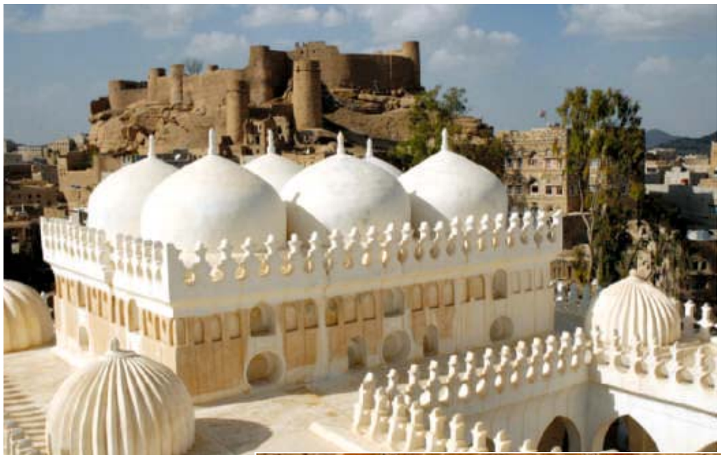
Aga Khan Award for Architecture 2007 winners named

The nine projects that were honored with the 2007 Aga Khan Award for Architecture, announced on September 4, range from a sustainable residential tower in Singapore to a village school hand-built by local volunteers in Dinajpur, Bangladesh. This year marks the 10th cycle of the triennial awards. His Highness the Aga Khan, Imam of the Shia Imami Ismaili Muslims, created the program to recognize how architecture and the built environment influence Muslim societies; the prize fund totals $500,000, the largest purse among architectural honors. A nine-person, independent master jury selected the winners from a field of 343 entries and a short list of 27 entries.

Jurors noted several themes that were common among entries in the current cycle. "Many of the projects occupied the problematic terrain between traditional homes and diasporic movements, recognizing that Muslim realities have come to be rooted in historical and social circumstances beyond their usual 'national' or traditional settings," the jury said



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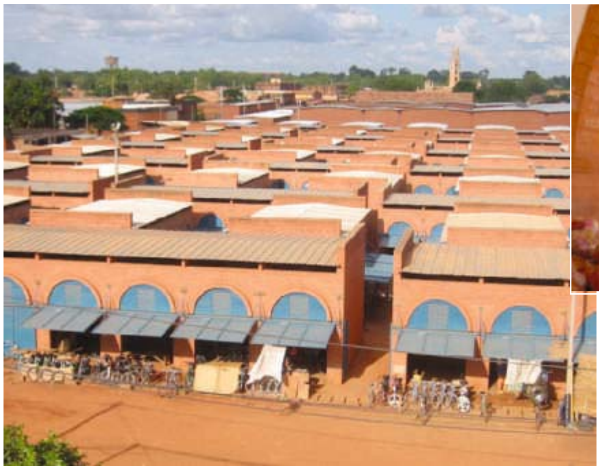

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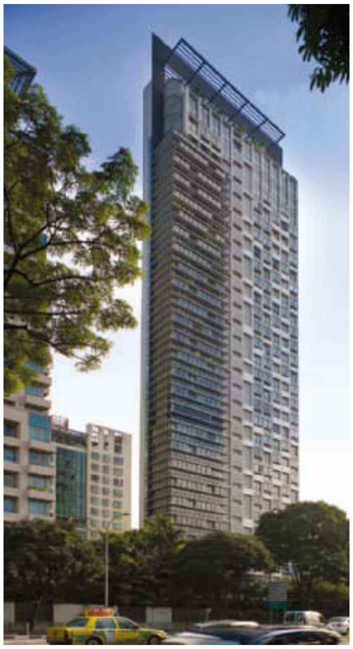

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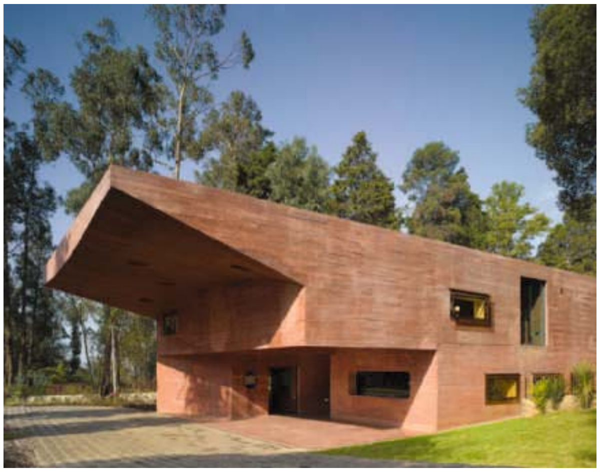

1. Restoration of the Amiriya Complex, Rada, Yemen. Archaeologists Selma Al-Radi, of Iraq, and Yahya Al-Nasiri, of Yemen, revived traditional building techniques in restoring an ornate monument commissioned by Sultan Amir ibn 'Abd al-Wahab in the 16th century. **2. Central Market**, Koudougou, Burkina Faso. The Koudougou Municipality, the Swiss Agency for Development and Cooperation, principal architect Laurent Séchaud, and consultant Pierre Jequier used simple, earthen material to build a monumental civic hub. **3. Moulmein Rise Residential Tower**, Singapore. Locally based WOHA Architects, led by Wong Mun Summ and Richard Hassell, used innovative natural ventilation systems, sky gardens, and other sustainable features to green a developer-built apartment tower. **4. Royal Netherlands Embassy**, Addis Ababa, Ethiopia. Dutch architects Dick van Gameren and Bjarne Mastenbroek, working with the Ethiopian firm ABBA Architects, designed a modern building that respects the local vernacular and landscape.

PHOTOGRAPHY: © ANNE DE HENNING (1); AMIR-MASSOUD ANOUSHFAR (2, RIGHT); LAURENT SÉCHAUD (2, LEFT); TIM GRIFFITH (3); CHRISTIAN RICHTERS (4)

in a statement. This "problematic terrain," jurors added, in fact provided positive opportunities for cultural revision and intercultural communication. Other themes shared by many entries included preservation and the use of sustainable design principles. *James Murdock*

Master Jury

The jurors for the 2004–2007 cycle were professor **Homi Bhabha** of Harvard University; **Okwui Enwezor**, curator, dean of academic affairs, and senior vice president at the San Francisco Art Institute; **Homa Farjadi**, principal of Farjadi Architects; **Sahel Al-Hiyari**, principal of Sahel Al-Hiyari and Partners; artist **Shirazeh Houshiary**; professor **Rashid Khalidi** of Columbia University; **Brigitte Shim**, a partner in Shim Sutcliffe Architects; **Han Tümertekin**, a principal of Mimarlar Tasarim Danismanlik; and **Kenneth Yeang**, a principal of Llewelyn Davies Yeang, and Hamzah & Yeang.

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5. Rehabilitation of the Walled City of Nicosia, Nicosia, Cyprus. Working together under a historic 1979 agreement, the Greek Cypriot and Turkish Cypriot communities used architectural restoration as a catalyst to improve quality of life in a divided city. **6. University of Technology Petronas**, Bandar Seri Iskandar, Malaysia. Foster + Partners, of the U.K., and GDP Architects, of Malaysia, employed canopies and other low-tech features to cool the campus of a technology institute built by Petronas. **7. School in Rudrapur**, Dinajpur, Bangladesh. Architects Anna Heringer and Eike Roswag, officials from the Bangladeshi aid agency Dipshikha, and local volunteers hand built a village school with loam, straw, bamboo, and other simple materials. **8. Samir Kassir Square**, Beirut, Lebanon. Locally based landscape architect Vladimir Djurovic designed a serene, pocket-size respite from the frenzied streets of Beirut's central business district. **9. Rehabilitation of the City of Shibam**, Wadi Hadhramaut, Yemen. The government of Yemen, the German Technical Cooperation, and the community of Shibam collaborated to rehabilitate housing and infrastructure in a town of mud-brick, high-rise buildings. The project also helped restore Shibam's economy.

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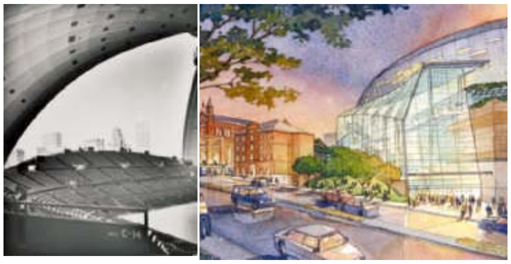
Pittsburgh's new arena: Back to the future?



HOK Sport's new arena (left) will replace the Pittsburgh Penguin's 1961 home (far left).

HOK Sport unveiled plans in August for a new $290 million hockey arena in Pittsburgh's Hill District, at the eastern edge of downtown. The project, which was announced earlier this year by the city's Sports and Exhibition Authority (SEA) and the Pittsburgh Penguins, has reopened old wounds in the contentious relationship between development authorities and the community.

Designed by Mitchell and Ritchey, the existing Mellon Arena is hockey's oldest operating arena, opened in 1961. As RECORD reported in its November issue that year, the building's retractable roof was a first. But the Penguins, who have played there since 1967, threatened to leave Pittsburgh unless they got a new, publicly subsidized venue.

In HOK Sport's preliminary renderings of the new building, a metal-and-glass-clad, oval-shaped arena with an estimated seating capacity of 18,000, fits tightly into its sloping site. It presents an 80-foot-tall, crystalline entry volume to Centre Avenue, adjacent to Epiphany Church. On its Fifth Avenue elevation, a masonry facade—some 130 feet long and 55 feet high—alludes to the aesthetic of the few remaining historic structures nearby. Final designs are expected to be ready this fall, and the building is scheduled to open in 2010.

To pay for construction, Pennsylvania's governor helped broker a bond issue that will be paid with revenue from a new casino. The deal also gave the Penguins rights and a $15 million incentive to redevelop the old arena's site. That land resulted from demolishing the culturally rich, primarily African-American Lower Hill District during the 1950s to make way for a largely unrealized cultural and residential redevelopment. Adjoining neighborhoods continue to struggle, and resentment runs high.

"The Penguins have never been a friend of the Hill District, as far as I'm concerned," Lois M. Cain, a long-time Hill resident and activist, said at a public meeting this summer. As to any agreements about community benefits and accommodations from a new stadium, she warned, "You better make sure it's legal and it's in writing."

Neighborhood groups, led by the One Hill Community Benefits Agreement Coalition, are lobbying for grants, a share of development funds, and 30 percent minority hiring in development projects. Thus far, there are only agreements for the Penguins but not for the community.

To follow a city-mandated process, the Penguins and the SEA hired Don Carter, FAIA, of Urban Design Associates Architects, to conduct a separate series of community meetings. Among the groups that hope to give their input is Preservation Pittsburgh, whose executive director, Steven Paul, laments the demolition of historic properties earlier this year under an outdated master plan. His organization wants to identify and preserve remaining historic properties, such as the childhood house of playwright August Wilson, and the New Granada Theater, an Art Deco movie house that hosted musical performances and political rallies.

But Carter cautioned that his community meetings will address only the new arena, "not the 28 acres [of redevelopment] or the Community Benefits Agreement." While many observers find these negotiations a welcome step, they believe that the current master plan, adjacent development, and the Community Benefits Agreement must be considered more holistically to avoid repeating mistakes of the past. *Charles Rosenblum*

Home-plate home

Chicago's Wrigley Field, which for a century has brushed up against apartments, used to be the exception among major-league ballparks, which tend to sit enveloped by asphalt on a city's fringe. Not anymore. As stadiums move downtown, developers are constructing high-rise residences that offer box-seat-worthy views of games.

In 2004, Antoine Predock Architects' PetCo Park debuted in San Diego's East Village, a district once dominated by car-repair shops. Guided by San Diego's economic development group, Centre City Development Corporation, the neighborhood has since welcomed 3,040 condominium units and apartments, with 5,273 more under way now or in the offing. Opening this fall is the Legend. Designed by Perkins & Company, the 23-story tower contains 183 condo units, many of which command a premium for their sight lines to batters. At its closest point, the building is roughly 100 yards distant from the ball field. Those who don't have home-plate views—roughly half the units—can still enjoy games from a 2,800-square-foot deck on the seventh floor. The tower's precast-concrete panels and sandy-colored-brick podium match the aesthetic of PetCo Park and nearby warehouses.

Following the Padres' lead, the St. Louis Cardinals began work this summer on Ballpark Village, a 9-acre mixed-use development abutting the current Busch Stadium, by HOK Sport, which opened in 2006. The first phase of the $650 million project, designed by Beyer Blinder Belle, will include a 30-story retail, office, and residential tower with 250 condos, many of which will overlook left field. "It may not be for everybody, but for Cardinals fans, it will be the coolest thing in the world," says Bill DeWitt III, vice president of business development for the team, which partnered with developer Cordish Company on the project.

Condos will overlook Busch Stadium.

Developers in Washington, D.C., are hoping the same holds true at the new stadium for the Nationals, which is set to open in time for the 2008 season. Architect Joe Spear, AIA, kept the stadium's walls low to maximize views from the street. Residents of two proposed condo towers in the surrounding Anacostia neighborhood will also get a view of the action. Even if it means giving away their product for free, Spear says, team owners like next-door neighbors because "if it's all offices, it will be lifeless after business hours."

Is a field without players worth a front-row seat? Detroit hopes so. This month it will raze 80 percent of the bleachers that ring Tiger Stadium, which closed in 1999, but leave the diamond intact. Eventually, 300 market-rate condos will surround the grass, says Peter Zeiler, a development representative with the Detroit Economic Growth Corporation, which is orchestrating the project with Hamilton Anderson Associates. "There have been iterations of baseball on that site for 140 years," Zeiler says. "It's very sacred ground." And, many hope, a real estate grand slam. *C.J. Hughes*

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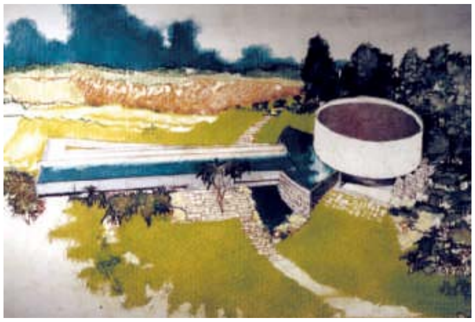
Battle rages to save Neutra's Cyclorama Center



Neutra's Cyclorama Center at Gettysburg could be gone by 2009.

The Battle of Gettysburg lasted three days. The battle over the fate of Richard Neutra and Robert Alexander's Cyclorama Center at the Gettysburg National Military Park has dragged on for 10 years—and now, with the park poised to raze the building, it has shifted to the federal courts.

Opened as a visitor center in 1961, the Cyclorama Center was built as part of the Park Service's Mission 66 program, which erected roughly 100 Modernist visitor centers and hundreds of other tourist buildings between 1956 and 1966. It housed a life-size, narrative oil painting of 1884, by French artist Paul Philippoteaux, depicting the pivotal Civil War battle. Cyclorama paintings are hung in 360-degree circular spaces. The Gettysburg painting's 27 panels have been restored and will be moved to a new facility.

The Gettysburg National Military Park's 1999 management plan calls for the removal of the Cyclorama Center as part of the "rehabilitation of major battle action areas, where features on the landscape affected the fighting," says spokeswoman Katie Lawhon. The park's period of historical significance runs from 1863 to 1938, she adds, and applies to the battlefield, cemetery, and commemorative elements, including monuments and carriage roads.

Critics contend that the park officials' approach shows an anti-Modern bias. They note that the master plan retains automobile parking on the spot—a key section of the Union line on Cemetery Ridge, where Pickett's Charge was turned back—and thus fails to restore the historic acreage. "Their claims about the authenticity of the battlefield are myopic," says Dion Neutra, one of Neutra's sons and his former business partner. "They should come to their senses and realize that Cyclorama Center deserves to stay where it was sited by their predecessors. If all else fails, move it to a site nearby."

Dion Neutra and the Recent Past Preservation Network (RPPN) are suing officials of the Department of the Interior, the National Park Service, and the Gettysburg park in an effort to halt demolition of the Cyclorama's old home. They allege that officials failed to heed environmental and preservation laws in deciding to raze the 30,000-square-foot building, that they neglected its upkeep, and that officials failed to consider alternative uses for it.

In the meantime, the park is forging ahead on construction of a new, 139,000-square-foot museum and visitor center two thirds of a mile southeast of the Neutra building. Designed by Cooper Robertson & Partners, it is scheduled to open in April 2008. Lawhon says that within a year of its opening, the park will demolish the Cyclorama Center.

The World Monuments Fund included the Cyclorama Center on its 2006 Watch List. Dion Neutra has lobbied vigorously to save it and other remaining examples of his father's work. His efforts include a petition requesting that President Bush issue a White House pardon for the Gettysburg center—although the tactic's symbolism is questionable.

"I wouldn't compare the building to a turkey," says RPPN president Christine Madrid French, "but, in the sense of forgiving the building's appearance after such neglect and moving past the bias against Modernism, it works." The Washington, D.C., federal district court will hear the case in November, according to French.

"I'm just glad my dad didn't live to experience this," Neutra says. "The project meant so much to him as an immigrant." The elder Neutra practiced in his native Austria before emigrating to the United States in 1923. *Ted Smalley Bowen*

Breuer-designed Wolfson House on the block

Marcel Breuer's trailer house is going, going ...

Following his successful sale of Case Study House #21, Chicago's Modernist-design auctioneer Richard Wright is putting another mid-20th-century residence on the block. But instead of a Pierre Koenig icon, the lot up for grabs on October 7 is an arguably kitschy work by Marcel Breuer. The idiosyncratic house, located in Dutchess County, New York, is the result of an equally outlandish invitation from client Sidney Wolfson. The brief: to design a structure that incorporated a loaf-shaped aluminum Spartan Trailer, manufactured in 1947.

Despite his initial resistance to this charge, Breuer began work in 1949 after taking on a commission at nearby Vassar College. He nestled the trailer beneath a pergola, making it one terminus of a perpendicular entrance hall; the opposite, permanent wing features several Breuer trademarks, such as a wood-clad second story cantilevered on a stone base and an open interior with a freestanding fireplace. Wolfson later commissioned Tip Dorsel to build an artist's studio on the property in 1960. To relate to Breuer's contribution, Dorsel used oversize gestures, including double-height ceilings and a tall entrance door that, viewed from the trailer, appear equivalent in scale. David Diao, who has owned the 10-acre Wolfson property with his wife, artist Maureen Connor, since 1996, wants to sell it because he says his heart "belongs to the city."

The December 2006 winning bid for Case Study House #21 exceeded $3.5 million, but Wright estimates that the Wolfson Trailer House might fetch between $1 million and $1.5 million at auction. And while the Case Study House went to a Korean collector who frequents Wright's regular auctions, he expects that the Wolfson's proximity to Manhattan—a 2-hour drive south—will appeal to buyers seeking a weekend residence.

The Wolfson sale also reinforces the trend of auction houses getting into the Modernist-residence business. Wright says that Christie's and Sotheby's, which have already sold the Farnsworth House—the Philip Johnson–designed Manhattan town house—and Jean Prouvé's Maison Tropicale, "are absolutely looking at the success we had."

Wright admits that taking on another Modernist house is potentially lucrative, but adds that selling these works is intellectually satisfying. "It speaks of a place and time—the quirkier side of America in the late '40s. The mix of optimism, consumerism, and naïveté in postwar America has always fascinated me." That said, he has no plans to focus on real estate exclusively. *David Sokol*

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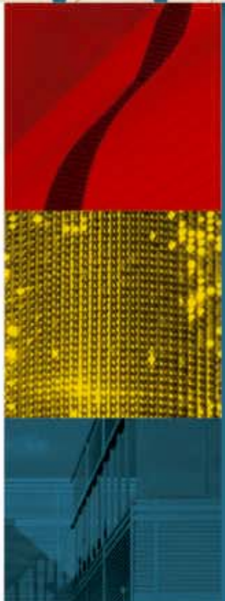

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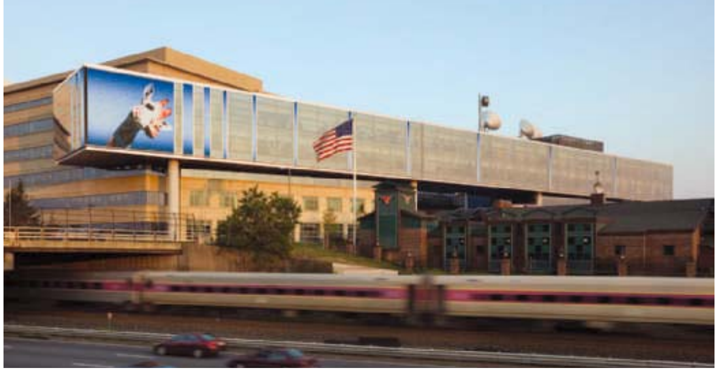


WGBH's new headquarters (above); Newhouse III at Syracuse University (left).

Polshek Partnership Architects is spreading the news—literally. The Manhattan-based firm has designed three journalism-related projects featuring design elements that explicitly express the building's program.

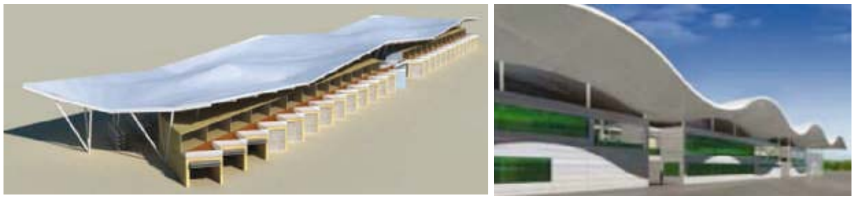
In its new headquarters for public broadcaster WGBH, Polshek created what it hopes will be an iconic moment along the Massachusetts Turnpike just outside Boston. The 310,000-square-foot complex opened on September 17. It features a 30-foot-by-40-foot LED screen on the northern end of a 480-foot-long office and production zone dubbed the "beam." The screen cantilevers toward the heavily traveled road and can be seen from nearly 2 miles away. Each day it displays a single image taken from WGBH's programs, such as *Frontline* and *Nova*. "You might see a picture from Mars one day and something microscopic the next," says Richard Olcott, FAIA, a partner at Polshek. Strips of the LED screen punctuate the beam's aluminum-and-glass curtain wall. The screen and strips are coplanar with the facade, creating what Polshek partner Tomas Rossant, AIA, describes as a digital skin: "We want to think of it as a skin that came alive rather than something tacked on as ornamentation."

Polshek applied the same rationale in Newhouse III. This new, 75,000-square-foot structure, dedicated on September 19, extends a mini-campus for the S.I. Newhouse School of Public Communications at Syracuse University. Its east facade, made of precast-concrete and fiber-cement panels, matches the staid aesthetic of existing buildings by I.M. Pei and Skidmore, Owings & Merrill. In contrast, the west facade's kinetic, sinuous form evokes old news tickers in Times Square. The ample use of glass along this elevation holds symbolism, Rossant says, because this material communicates transparency, a quality integral to journalism. And in one part of the facade, the text of the First Amendment is sandwiched between a double-layer glass curtain wall using tiny dots of white paint on a PVC sheet.

The First Amendment also figures in the facade of the Newseum, Polshek's 250,000-square-foot journalism museum in Washington, D.C., scheduled to open in early 2008. Here, though, the amendment text is engraved on a giant stone tablet.

While Polshek has no plans to focus exclusively on journalism projects, Rossant says that mixing media and architecture offers exciting possibilities. "As soon as you can integrate those two things together, you have a new type of architecture." *Jenna M. McKnight*

Sincere flattery or something worse?



Parts of the "floating boathouse" (right) resemble Whitefield McQueen's scheme (left).

Athletes are no doubt excited about the Beijing 2008 Summer Olympics, but before the games begin at least one architect is crying foul. Whitefield McQueen Architects, of Melbourne, Australia, claims that the Chinese government's design for the Shunyi Olympic Rowing-Canoeing Park, a "floating boathouse" with an undulating roof, resembles a scheme that it submitted for a design competition in 2005. Tim Whitefield has no proof that his design was intentionally stolen, but he finds the similarities suspicious—and disappointing. "We are a young firm, so it would have been a substantial opportunity for us. I am saddened by the experience."

Attempts to contact the Beijing Organizing Committee were unsuccessful. Architecturally speaking, though, China is often cited for lax protection of intellectual property rights. And it's not alone. Accusations of plagiarism continue to haunt competitions even in the United States. Detractors alleged that Eero Saarinen's 1947 Gateway Arch in St. Louis, for example, was lifted from Le Corbusier's 1931 Palace of the Soviets. Copycat charges also hung over Maya Lin, designer of the Vietnam Veterans Memorial in Washington, D.C., after her 1982 win.

The latest contested competition is a memorial to Flight 93, the hijacked plane that went down near Shanksville, Pennsylvania, on September 11, 2001. Sculptor Lisa Austin alleges that the National Park Service appropriated elements of her competition entry and incorporated them into the winning scheme by architect Paul Murdoch. William Hayworth, a spokesman for the memorial project, disputes her claim, saying that many submissions shared common design traits. Besides, he adds, "nothing is wholly original in the universe."

Rather than trying to prove plagiarism, come up with a better public design process, says architect Paul Spreiregen, FAIA, of Washington, D.C. Multistage competitions provide "ample opportunity for ideas to be taken from one design and used for another," he wrote in an editorial last fall in *Competitions* magazine.

Even if mimicry is unintentional, better to avoid it altogether, says Jared Della Valle, a principal of Della Valle Bernheimer. When he discovered that Herzog & de Meuron's de Young Museum, in San Francisco, was to have a perforated copper skin, he opted to redesign a house in Connecticut that was to have a similar feature. "We all like to believe we are independent thinkers," Della Valle says.

Clients, too, should shoulder some blame, since their influence on plans can produce look-a-like buildings, contends Lee Skolnick, an architect based in Manhattan. Another culprit? Self-promotional architects: "They're expected to come up with a facsimile of what brought them to prominence," he says. *C.J. Hughes*

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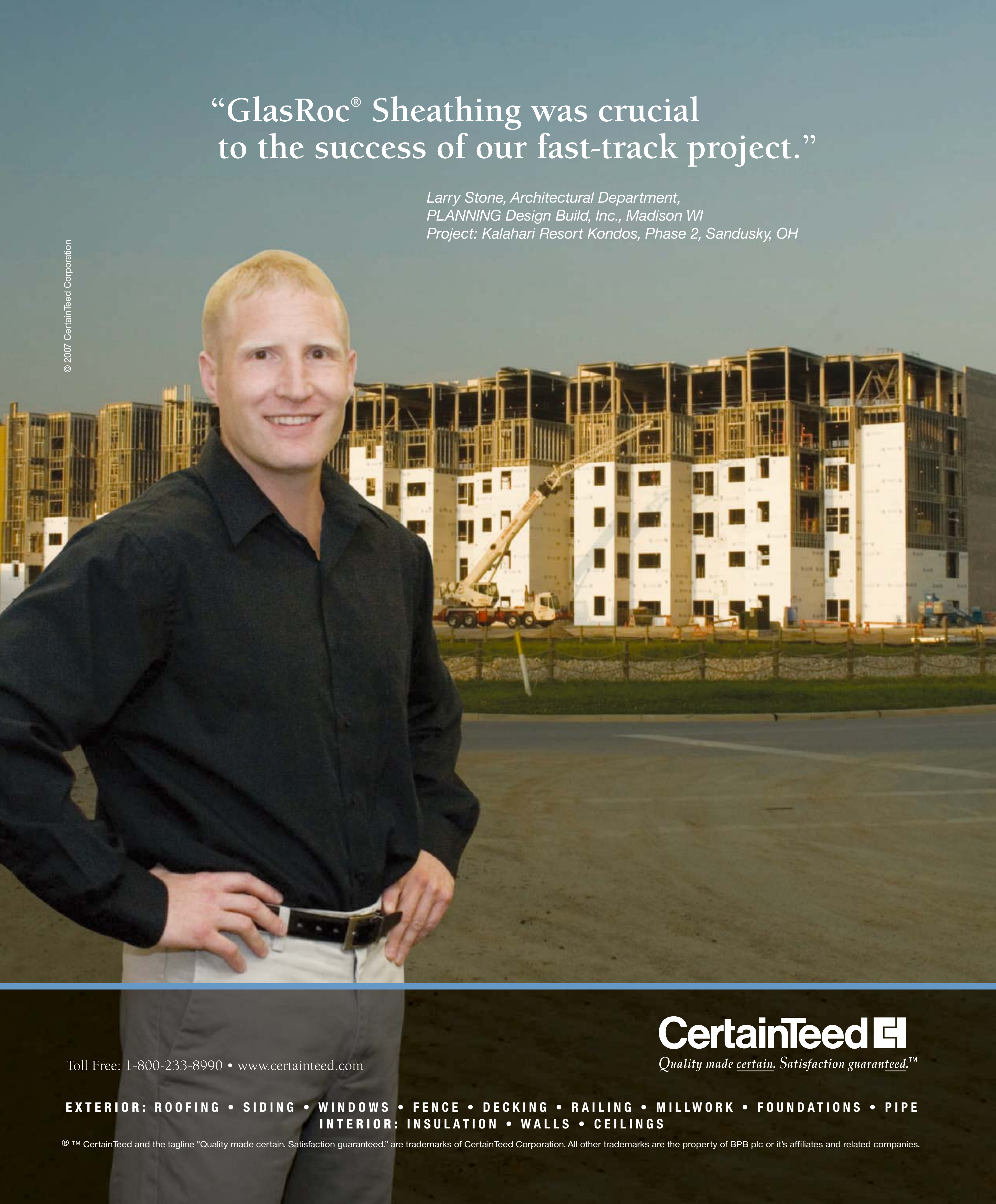

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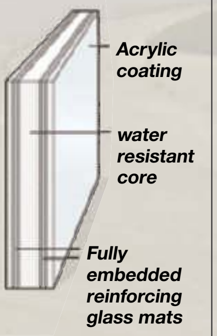

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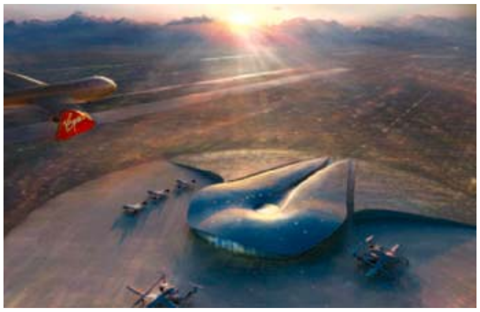
Foster, URS unveil designs for space tourism’s giant leap



Passenger areas cap Spaceport America’s hangar.

As NASA prepares to retire the space shuttle by the end of the decade, just in time for completion of the International Space Station, the tourism industry is planning to take its own giant leap into the void. Conceptual plans for the world’s first tourist spaceport, designed by Foster + Partners, were unveiled September 4.

Known as Spaceport America, the terminal and hangar complex in Upham, New Mexico, will be home to Richard Branson’s Virgin Galactic enterprise. To ferry tourists into space and back, a transport plane, called a White Knight, will carry a spaceship—designed by Burt Rutan—to an altitude of 49,000 feet, at which point the spacecraft launches into suborbital space and reaches a height of 84 miles before returning to Earth. A round-trip journey will last 2½ hours. Virgin expects to begin regular flights as early as 2009 and is currently accepting deposits on $200,000 space tickets.

The program for Spaceport America includes a hangar for two White Knights and five spaceships, pre- and post-flight training facilities, mission control, viewing galleries, and passenger lounges. Foster designed the low-slung, 100,000-square-foot structure to be viewed from the ground and from above. It is capped by a rolling, concrete roof whose shape resembles a manta ray. The terminal hall features 50-foot ceilings and large windows facing the main runway at Spaceport’s eastern edge. “It is an extraordinary location with the views of the mountains and the rolling plains,” says Grant Brooker, executive director and architect in charge of the project at Foster. “We became very concerned about how the building would be seen in this setting. The building is grown up out of the ground to make it a more organic part of the landscape.”

Spaceport America’s design addresses earthly concerns, too. Sustainable features include electricity-generating photovoltaic panels and a system to store and reuse water. URS Corporation, known for its work on the Denver International Airport and the National Aeronautics and Space Administration’s Marshall Space Flight Center, is working with Foster on the project.

The New Mexico Space Authority, a state agency created to develop commercial space travel, will provide funding for the $31 million project. It expects to solicit construction bids during the first half of 2008 and break ground that same year. *Dianna Dilworth*

Team of architects to green Chennai International Airport

The Airports Authority of India has selected plans by a team of architects, including Frederic Schwartz Architects, Hargreaves Associates, Gensler, and New Delhi–based Creative Group, to expand the Chennai International Airport. When completed in 2010, the $300 million project will transform Chennai, located in the city formerly known as Madras, into India’s greenest airport. The new Kamraj Domestic Terminal, in particular, will showcase sustainable technologies. The 23-year-old building currently measures 139,931 square feet and handles 4.74 million passengers a year; its revamped design will allow it to accommodate twice as many passengers in a space five times as large. Two lush gardens, measuring nearly an acre apiece, will separate the landside and airside portions of the terminal. A parking garage with a green roof will create what the designers describe as a “green gate” to the complex. Its landcaped, folding geometry will capture and direct rain water, creating shimmering “rain curtains” as water falls through the garage into cisterns below. Stored water will irrigate the plants. *Neelam Mathews*

Gardens will surround and punctuate the Kamraj terminal.

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Ground breaking could signal brighter future for Destiny USA

Despite delays, Pyramid has high hopes for Destiny.

IMAGE: COURTESY PYRAMID COMPANIES

After some highly publicized fits and starts, developer Robert Congel's Pyramid Companies quietly started construction in late July on a 1.3-million-square-foot expansion of the Carousel Center mall in Syracuse, New York. It is intended to be the cornerstone of Destiny USA: a 75-million-square-foot retail, hotel, and entertainment complex touted as the world's most sustainable project.

Congel is moving forward on Destiny thanks to a financing package worth $540 million, including $228 million in federal, tax-exempt green bonds designated for energy-conserving projects. This money, secured in February, was an important vote of confidence for a project that seemed dead in the water in early 2006. At the time, Pyramid and the city of Syracuse were deadlocked in a legal battle over tax abatements, and the community was suffering "promise fatigue" after Congel laid off most of its 210-person workforce.

But Pyramid's legal troubles are now largely resolved. Construction teams from Cianbro are prepping the 10-acre Carousel site—work that includes driving steel piles 140 to 320 feet deep into lakeside clay soil—and Dal Pos Architects, a local firm that designed the original Carousel mall, is working on plans for the expansion's first phase, which is due to be finished by the end of 2008. "A lot of people are breathing a sigh of relief: Okay, finally, here we go," observes Michael Wasylenko, an economics professor at Syracuse University. "We've been talking about this long enough. Now it's happening."

In the short term, Destiny's future is more modest than Congel once envisioned. The first phase will nearly double the 1.5-million-square-foot Carousel Center; unassuming, stepped concrete facades will mimic the existing, 17-year-old mall's architecture. But Destiny could one day feature 1,000 shops and restaurants, 80,000 hotel rooms, a 40,000-seat arena, a water park, aquarium, and technology park. An enormous glass canopy would encase a large portion of the complex, shielding it from the 110 inches of snow that Syracuse receives on average each year.

Perhaps the most nontraditional aspect is who would actually build Destiny—and how. Congel has conceptualized what he calls a "unified workforce model," whereby the same people who operate power tools on the construction site will later operate cash registers and stock shelves in stores at the mall. While building Destiny, these laborers will follow assembly instructions using handheld computers rather than paper blueprints. (RECORD's parent company, McGraw-Hill, is sponsoring a conference about some of these techniques.)

Destiny will also showcase sustainability. The complex will have its own renewable-energy power plant, enabling it to operate independently of fossil fuels. A horizontal elevator system will transport people around the car-free mini-city, and a monorail will connect it to Syracuse's airport and downtown. Pyramid also plans to incorporate more than 3,000 tons of coal ash into sidewalks and other concrete elements—one feature that led the U.S. Environmental Protection Agency to describe Destiny as "the world's largest structure to be built from recycled industrial materials." Congel is beginning to deliver on his green promises in the project's first phase, which aims for LEED Gold certification. Construction vehicles are powered by 100 percent biodiesel fuel, and the building features a storm-water-capture system. In a show of support, the U.S. Green Building Council purchased $50,000 of the tax-exempt green bonds awarded to the project.

As for Destiny's future, the Syracuse Industrial Development Agency agreed to provide Pyramid an undetermined amount in bonds for two additional phases, a 1,000-room hotel and 350,000 square feet of mixed-use space, which must be completed by 2013. But the developer still has a long way to go before securing the estimated $20 billion needed for the entire complex. "There are a lot of people who doubt [the expansion of Carousel] will ever lead to Destiny," says Rick Moriarty, a reporter at *The Post-Standard* who has written hundreds of stories about the project since it was introduced in 2001. "So many delays, so many false starts. A lot of people think, 'I'll believe it when I see it.' "

David Aitken, a member of Destiny's executive team, responds to such comments by taking the long view: "Like any large project, a lot of coordination needs to take place. We went through a period of challenges getting it off the ground. That is behind us now." *Jenna M. McKnight*

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Can architects help fix construction's "busted budgets"?

Barry LePatner, a Manhattan-based attorney who counts Frank Gehry and other big-name architects among his clients, sees a problem with the construction industry in the United States—clearly indicated by the title of his book *Broken Buildings, Busted Budgets*, published October 1. "This is the industry that time has forgotten," he says. "Mom-and-pop shops, composed of 20 people or less, make up 92 percent of the industry. They are hugely inefficient, and they have no money to spend on improving performance and technology."

The result, LePatner continues, is tremendous waste in a $1.2-trillion-a-year business—nearly half of labor expenses on a project, according to some studies, are squandered due to schedule conflicts and late deliveries. Problems arise because, unlike the automobile industry and others in which manufacturers benefit from economies of scale and accurate scheduling, construction managers are forced to coordinate dozens of smaller, unreliable subcontractors. LePatner also says that the construction industry suffers from "the winner's curse": Contractors bid so low that the profit margin erodes and the only way to reclaim it is by filing change orders. Unsurprisingly, construction leaders are troubled by his claims.

"The word that captures the feelings of our members is 'insulted,' " says Stephen Sandherr, chief executive of the Associated General Contractors of America (AGC). Few contractors abuse change orders to drive profits, he contends, and "to say that the construction industry has not embraced innovation or collaboration is naïve. Just look at the innovations in the past 20 years: design-build, construction management at-risk, and value engineering. Look at building information modeling (BIM), which embraces new technology and allows for enhanced collaboration between designers, contractors, and suppliers."

LePatner remains unimpressed by these advances—and as promising as BIM looks, he adds, few contractors have embraced it, let alone architects. Speaking of architects, what of their role? LePatner, an honorary AIA member, has some pointed words: "You've become so focused on design, you've lost the respect of contractors and clients. Your clients desperately need you to become more involved in pricing what you design, and as a check against contractors who take liberties with your designs in the field. You need to restore yourselves to the role of master builder."

RK Stewart, FAIA, president of the American Institute of Architects (AIA), is not sure that architects should reclaim the mantle of master builder, but he notes that greater collaboration between designers, contractors, and clients will create efficiencies. "In almost every project, there are some tense times as people seek to align expectations about cost, schedule, programming, and what they're trying to achieve. That's why you've seen growing interest in integrated delivery." This new model, Stewart explains, brings architects and contractors together early in the design process to coordinate accurate construction documents. The AIA has also been working with the AGC and the Construction Users Roundtable—which represents building owners—to redefine risk and reward.

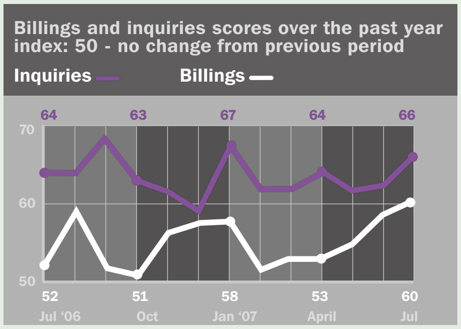
LePatner welcomes such developments, but believes more systemic changes are needed. He recommends consolidation within the commercial construction industry, creating vertically integrated firms like Toll Brothers, Pulte, and other large residential builders. LePatner also contends that every contract should be a fixed-price agreement: "We live in a society of fixed prices."

Sandherr disagrees that such contracts are possible. Assembling an automobile is not the same thing as erecting a building, he notes, and plenty of transactions occur without fixed prices—such as purchasing the services of an attorney.

But LePatner hopes that the business will redefine itself. "If we save only 10 percent in the construction industry, we put back $120 billion a year into the economy." *James Murdock*

Billings near two-year high

The American Institute of Architects' Architectural Billings Index gained 7 points in July for a score of 60, its highest level since September 2005. Although the volume of new inquiries also rose, neither index reflected recent credit-market turmoil. Studies show a correlation between billings and future construction levels. *James Murdock*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The Philadelphia Museum of Art opened its first new structure in 80 years on September 14. Designed by Gluckman Mayner Architects, the 184,000-square-foot Ruth and Raymond G. Perelman Building allows the institution to display 130,000 art works—more than half its total collection—that had previously sat in storage. The Perelman originally opened in 1927 as the Fidelity Mutual Life Insurance Company Building. Gluckman restored its Art Deco features and added 59,000 square feet connected by a glass-roofed galleria. *Joseph Dennis Kelly*

Robert A.M. Stern Architects was selected to design the George W. Bush Presidential Library at Southern Methodist University, in Dallas—a high-profile historicist for an institution that wants only collegiate Georgian architecture. Stern bested a dozen Texas-based and national firms for the roughly $200 million commission; a five-member committee led by first lady Laura Bush interviewed the architects. The initial RFQ called for a 145,000-square-foot library and a 40,000-square-foot public-policy institute. No word yet on when conceptual schematic designs will be ready. *David Dillon*

Ludwig Mies van der Rohe's Tugendhat Villa, a 1930 landmark of early Modernism in the Czech Republic city of Brno, is set to close October 31 for renovations. Although the job was announced in 2004, it stalled after Daniela Hammer-Tugendhat, whose Jewish parents fled the country in 1938, demanded that the house be returned to her family as war reparations. The project was also delayed when an architect filed a lawsuit to protest the city's selection of a restoration team calling itself the Association for the Reconstruction of the Tugendhat Villa. The work will take up to four years at a cost of $10 million. *Russell Fortmeyer*

Women make up just 26 percent of architecture staffs; do critics and museum curators treat their work any differently? "Women in Modernism," a symposium to be jointly presented on October 25 at New York's Museum of Modern Art (MoMA) by the Beverly Willis Architecture Foundation and MoMA, explores this and other questions. Speakers include Columbia University professor Gwendolyn Wright, Harvard University professor Toshiko Mori, Graham Foundation director Sarah Herda, writer Karen Stein, and MoMA curator Barry Bergdoll. *James Murdock*

Russell Johnson died on August 7 at the age of 83. As the founder of the 37-year-old acoustics and theater-planning firm Artec Consultants, he raised the visibility of acousticians in the design and construction of performance venues. Although Johnson championed the shoe-boxlike auditoriums of older, renowned concert halls, he pioneered adjustable acoustics systems. He often used a combination of motorized reflectors and cloth systems, secondary acoustics chambers, and adjustable seating—all of which contribute to acoustical flexibility. Johnson's recent projects included the Jean Nouvel–designed Concert Hall in Lucerne, Switzerland, and Rafael Viñoly's Jazz at Lincoln Center in New York City. *David Sokol*

ENDNOTES

- Foster + Partners will oversee Libya's $3 billion plan to transform 180 miles of coastline into an ecologically sustainable destination for tourists.
- Larry Silverstein announced that his development firm will put out to bid 70 construction packages for three office skyscrapers at the World Trade Center site by November, with foundation and steel work set to begin in January.
- The Barnes Foundation's fitful quest to build a new art gallery for itself in Philadelphia marked a new chapter in September when its trustees selected Tod Williams and Billie Tsien over six semi-finalists in a two-stage competition.
- Frank Gehry is designing a $2 billion, 85-acre development in Lehi, Utah, that will feature a 450-foot-tall hotel tower—the state's tallest building—retail, residences, and nearby, a 10,000-seat arena for the Utah Flash basketball team.
- The National Council of Architectural Registration Boards launched a new online application for pursuing certification as well as the Intern Development Program.

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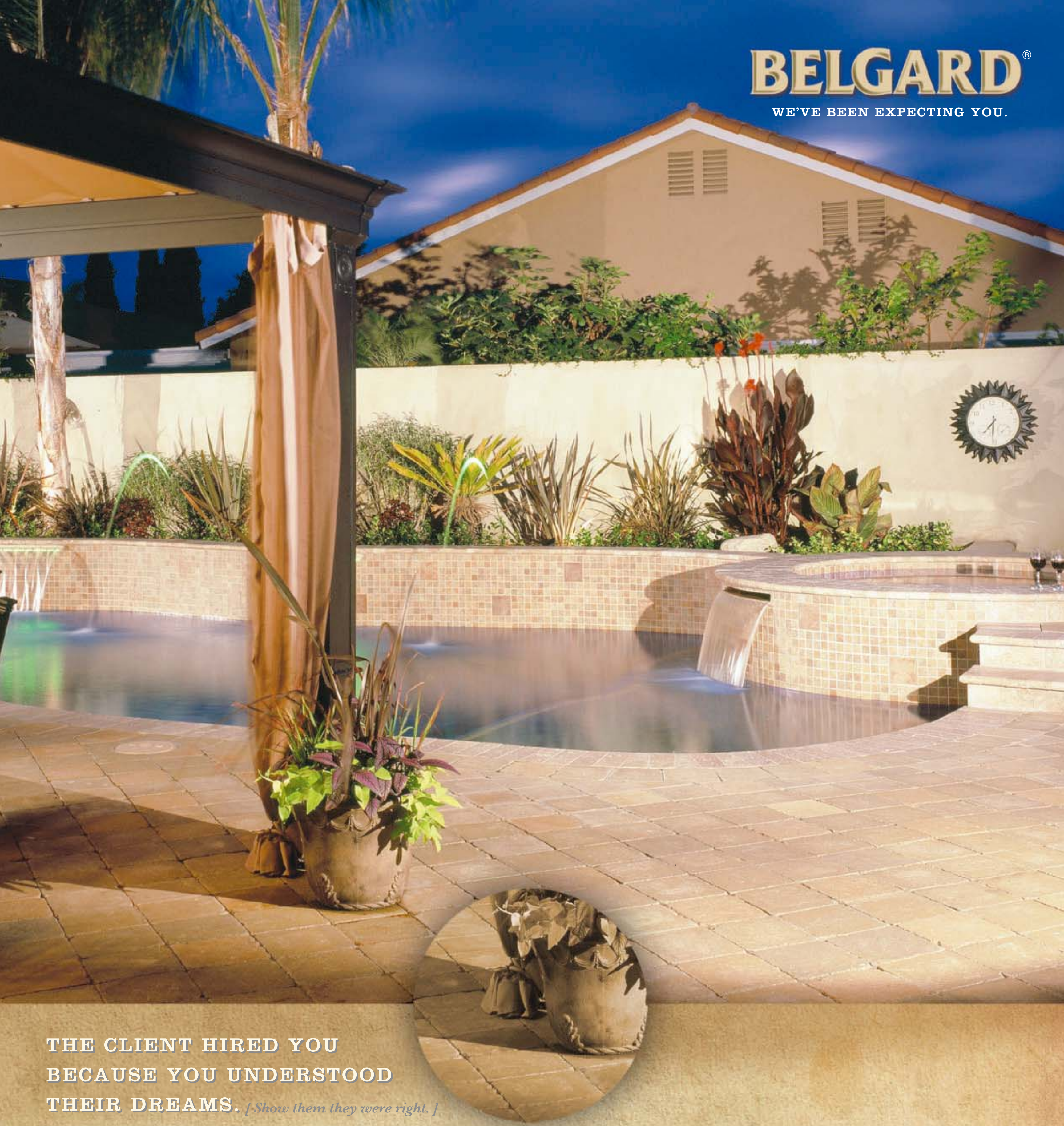

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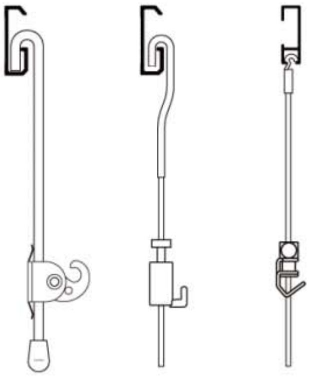

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For and about the emerging architect

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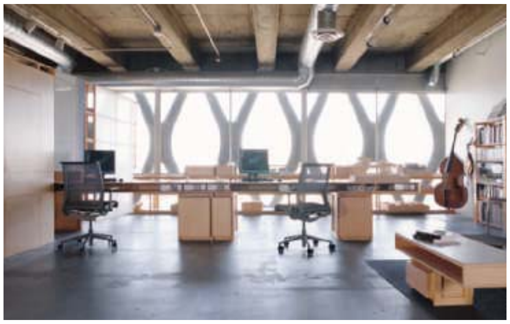
This month, we catch up with the coasts, profiling two talented young firms, Oyler Wu Collaborative and Associated Fabrication, that are leaving their design stamps on New York, Los Angeles, and beyond. Catch other emerging talent in archrecord2's Design, Work, and Live sections online, and leave your own mark in Talk, where you can comment and join forums. ONLINE: *What served as your firm's "calling-card" project? Respond at* ***construction.com/community/forums.aspx***.

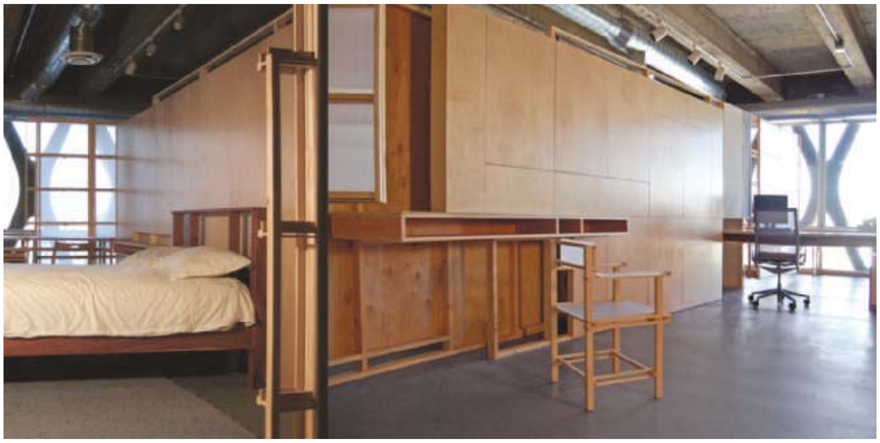
Design

Oyler Wu Collaborative: Layers and texture



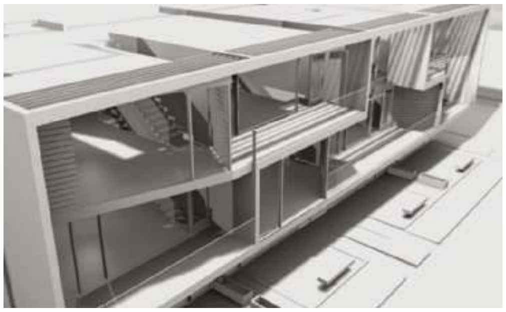
American Cement Building Loft, Los Angeles, 2005
This 1,400-square-foot loft has a partition with storage shelves and translucent fabric doors that separate live/work areas and celebrate views.

Their resume reads like an architect's fairy tale: two aspiring architects, Dwayne Oyler and Jenny Wu, met at Harvard's Graduate School of Design, graduated, and moved to New York to hone their craft working with prestigious architects and firms—he for Toshiko Mori and Lebbeus Woods, she for Architecture Research Office and Gluckman Mayner Architects. They decided to start their own firm, Oyler Wu Collaborative, get married, and go West. Like most fairy tales, Oyler and Wu had to journey through unknown territory (moving across the country and starting an office with no clients in hand) and experience conflict to get to their current state of a busy practice in Los Angeles with myriad projects completed and on the boards, local and overseas.



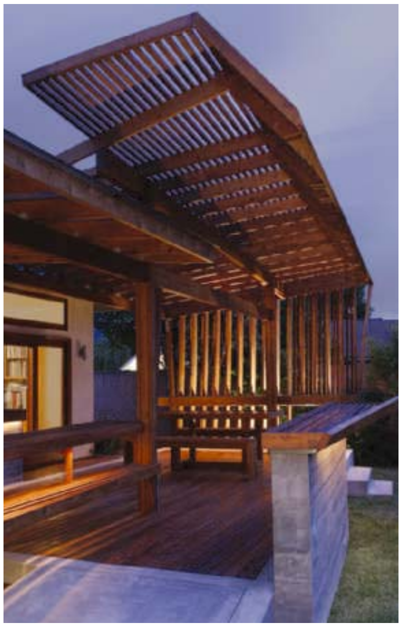
"We were both so into the work. We'd fall in love with it and get wrapped up in it," says Oyler about the mental struggles the couple went through before coming to an agreement about how their practice would be run. Though the two had grown used to criticism at school, they didn't know how to take it from each other. "We realized that it's not about me or Dwayne," says Wu. "We left the 'that's your thing, this is more my thing' behind."

Six years later, consensus has been reached. With projects on the boards as diverse as an 8,000-square-foot meditation/classroom building in Downey, California, to a 15-story residential tower in Taipei, Taiwan, the office of three (size fluctuates, but three is a constant) is gaining recognition and clients. It's the firm's office, literally, that serves as a calling card. In the iconic American Cement Building, in downtown L.A., Oyler and Wu renovated a 1,400-square-foot live/work loft for a materials cost of $2,500, designing an office separated from the couple's living space by a partition with built-in storage units and translucent fabric doors. The workmanship and versatility of the space shows how the firm can perform transformative architecture with a small budget and common materials.



Venice Lofts, Venice, California, 2006
Located between industrial and residential areas, this 9,000-square-foot apartment building has terraces in varied geometrical configurations along the facade.

IMAGES: COURTESY OYLER WU COLLABORATIVE

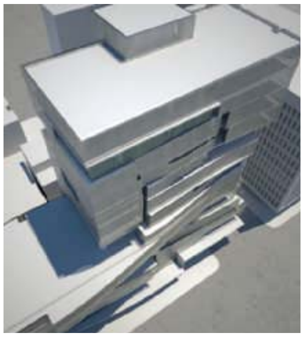


Suburban Intervention, Los Angeles, 2006

A backyard component added to an existing home comprised multiple horizontal planes including a deck; a slatted, cantilevered roof canopy; a tea table; and a long shelf.

While both Oyler and Wu reject the notion of a particular style repeating itself in their work, they do admit to a consistent approach to design. "We insist on looking at the big picture, and the intimate details," says Oyler. Material experimentation, digital renderings that explore layers and texture, and physical models help lead them to the right forms for the job at hand. "We both worked for firms that really taught us how to appreciate detail," says Wu.

Oyler says they were influenced by the masters they worked for in many ways, including how to run a small practice. "As different as Toshiko and Lebbeus Woods were, they both trusted the people around them. We strive for that, and run our firm like a studio." Because both partners are design faculty members at SCI-Arc, many of their collaborators are students. "It's great having access to that pool of talent," says Oyler. "We struggle to run an office that is driven by experimentation, and we find that the students we bring in are open to that." Oyler says the practice is feeling some growing pains. He likens the current state of the firm to a "wild animal." Sounds appropriate for this stage of a thickening plot. *Ingrid Spencer*



Taipei Tower, Taipei, Taiwan, 2009

In a bustling neighborhood in the heart of Taipei, this 15-story project features undulating balconies unique to each of its 28 floors.

ONLINE: To view additional photos and projects by Oyler Wu Collaborative, and to comment on this article, go to **architecturalrecord.com/archrecord2/**.

Work

Associated Fabrication: Heavy metal/light touch

The border of Brooklyn's Williamsburg and Greenpoint neighborhoods is an industrial-zone ballet. Behind garage-door prosceniums, pallet drivers turn pirouettes in loaded vehicles. A welder performs a pas de deux with a giant unfinished steel luminaire.

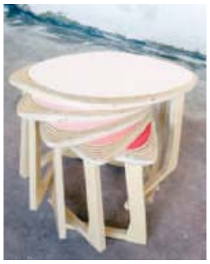
For the brains behind the brawn, consider the choreographers of Associated Fabrication. Inside a derelict factory that had once been used for dying textiles and stamping steel, Associated's four partners control the ronde de jambe–like movements of their Thermwood CS45-510 three-axis CNC mill, which produces architectural elements for a wide range of designers—including themselves, working under the moniker 4pli. Bursts from the drain valve on the mill's air compressor provide orchestral accompaniment.

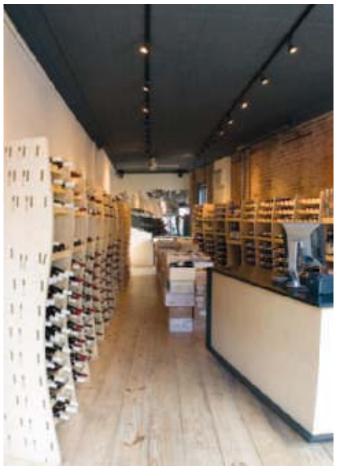
William Mowat, Amy Stringer, Jeffrey Taras, and Ken Tracy, who range in age from 30 to 35, all earned master's degrees from Columbia University Graduate School of Architecture in May 2005. They're not the only recent graduates to go into the business of making: Associated shares space with Caliper Studio, two of whose partners also went to school there.

Tracy thinks this is a counterpoint to his alma mater's promotion of digital design. "It was tiring just being in Maya and being able to make anything curvy. We wanted to make things physical." The members started working through the impulse at Columbia, which had installed a high-tech fabrication workshop in 2004. Today, Associated fields queries from school ties working at firms like Asymptote and Michael Maltzan Architecture.

The quartet hadn't originally set out to start a fabrication business. In May 2005, Taras had also snagged a job to design the office interior for Brainpop, a Web-based educational service, when he first assembled the team. A miniscule budget combined with their interest in hands-on materialization compelled the friends to design case furniture they could assemble themselves. "We made things with technology we trusted, using stacking techniques," Taras recalls. They outsourced the CNC milling, and sweated to put together 24 plywood-and-aluminum desks, a conference table, and other pieces.

The experience opened their eyes to the potential market for a New York City–based operation that could strongly sympathize with an architect's vision, and which would support 4pli until it took off. Now, Taras says, "We've been able to incorporate lessons that someone else paid for," and points to a curved maple-veneer wall at the 19,000-square-foot New Dance Group studio in Manhattan, fabricated for Spivak Architects, as an important training in lamination. "We are willing to try something new and different," Mowat says of Associated's mission. That enthusiasm for learning informs 4pli's own growth and has helped the partners dance into the hearts of clients like SOM, who are rewarding their fabrication knowledge with ever bigger, more challenging commissions. *David Sokol*





Under the name 4pli, the partners of Associated created the Petal5 nesting stools (above left). Also shown are wine storage units (left) and a wall exhibit (above) for Thirst Wine Merchants in Brooklyn, N.Y.

ONLINE: To view additional information about Associated Fabrication, and to comment on this article, go to **architecturalrecord.com/archrecord2/**.

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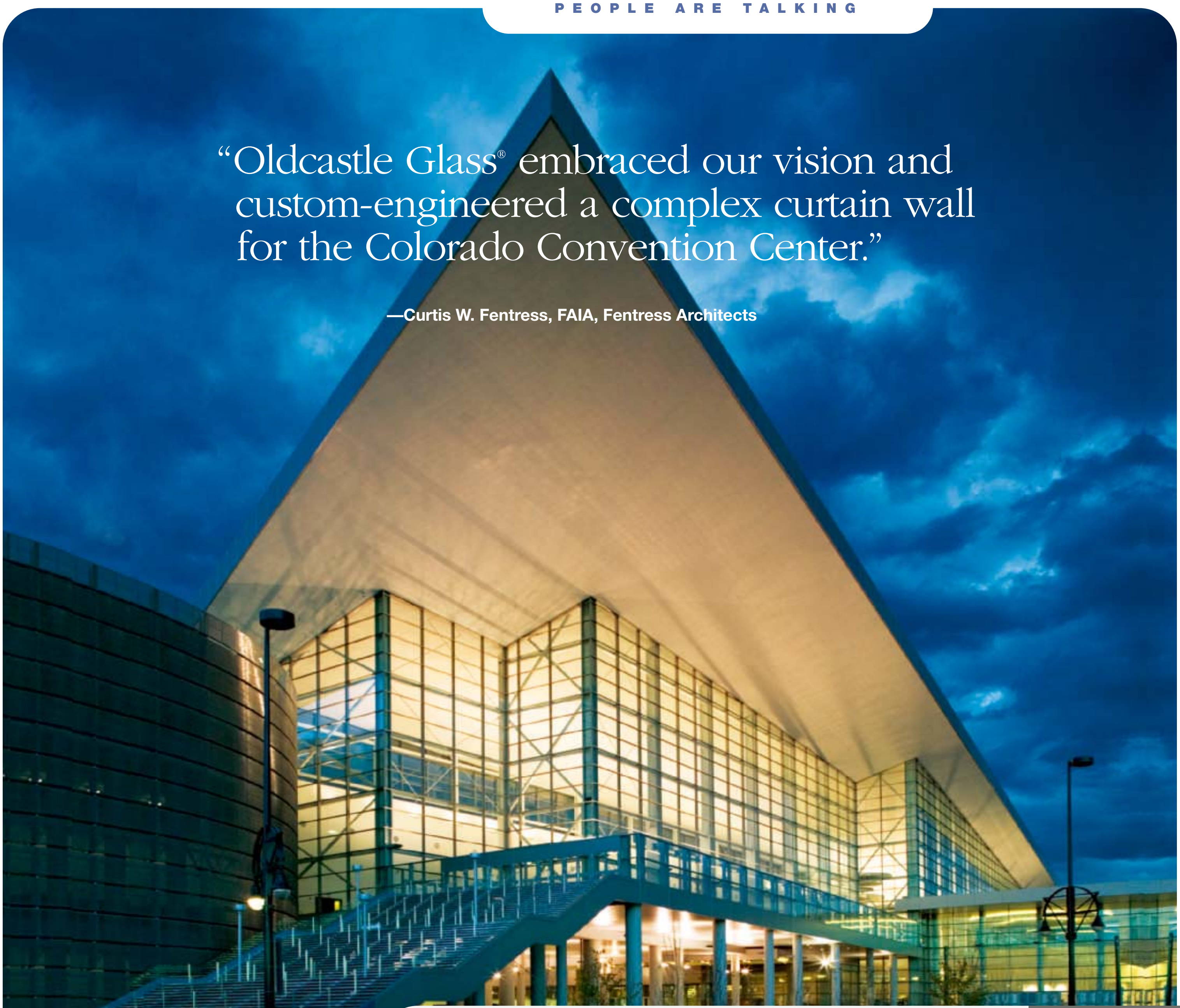
PEOPLE ARE TALKING



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Artists tackle architecture and find new ways of looking at it

Critique

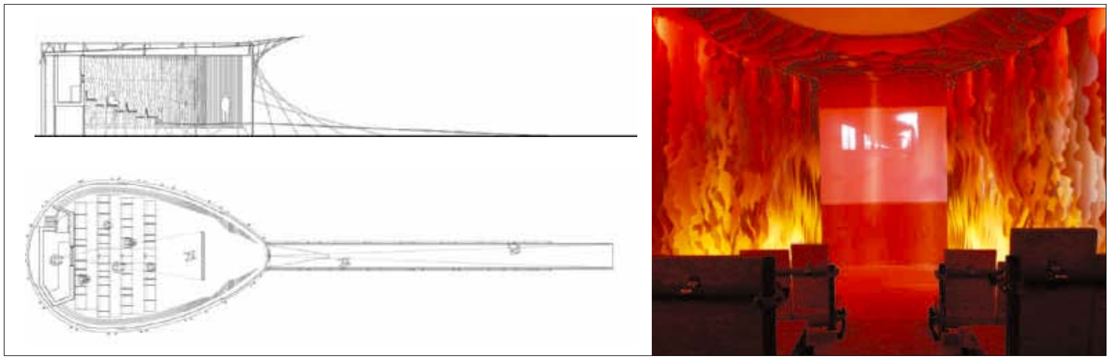
By Paula Deitz

In the catalog for Antony Gormley's recent exhibition, *Blind Light*, at the Hayward Gallery in London, the curator Jacky Klein cites Brancusi's dictum that "architecture is inhabited sculpture." But since the onset of the Constructivist movement in Russia in the early 20th century, sculpture itself has become architectonic and inhabited, if not physically, then mentally, in the seductive manner that the imagination allows the viewer to experience its interiority.

Not satisfied merely to imply habitation, two artists developed sculptural projects this year that work as architecture and engage viewers to complete the perceptual concepts behind them: Tobias Putrih's *Venetian, Atmospheric*, which represented Slovenia at the 52nd International Art Biennale in Venice, and Gormley's *Blind Light* at the Hayward. Both extract ideas from the artists' early memories of buildings and the consciousness of the self within space to produce a transforming experience for others.

As an artist, Putrih became enchanted by the fantasy world of old movie palaces from the 1920s and '30s, buildings that mediated between drab streets and the projection of celluloid fictions. He was also fascinated by multiplex cinemas and made cardboard models with white, ribbonlike screens that countered the blandness of the generic interiors. At Manifesta4 in Frankfurt in 2002, he put three of these small cardboard constructions (of theaters in Frankfurt) on pedestals, indicating his talent for encapsulating an illusion.

Transfixed by the theater's vanishing role as both a social venue and an escapist mechanism, Putrih envisioned a model that would suggest a fantasy environment and be large enough to function as a real space for gathering people. Taking his cue this time from London's Art Nouveau Odeon theaters from the 1930s and the 1928 New Victoria Theatre designed in German Expressionist style by Ernest Wamsley Lewis, he worked in 2005 with architect Luka Melon to build a "cineclub" at the Thomas Dane gallery in London. Called *A Certain Tendency in Representation*, after an essay by François Truffaut, the piece had a cardboard floor; slatted, undulating plywood walls; and foam-cushioned seats, all bathed in the same warm glow of yellow and red lighting found in Lewis's theater. Though films were projected on a regular basis, the "model" itself was the show.



For the Venice Art Biennale in 2007, Putrih created *Venice, Atmospheric* (above two), which recalls old movie palaces.

Now based in New York, Putrih has discovered the paragon of the "atmospheric" movie palaces in Loew's 1929 Paradise Theater on the Grand Concourse in the Bronx. The auditorium is surrounded by elegant Venetian Baroque–style facades with sculpture niches, colonnades, and exuberant carving creating the illusion of being in a Venetian *campo*, making it a kind of Teatro Olimpico *all'americana*. The designer of this and a hundred other such places was the Romanian-born American architect John Eberson, who fairly invented the idea of turning cinemas into illusory settings of exotic locales.

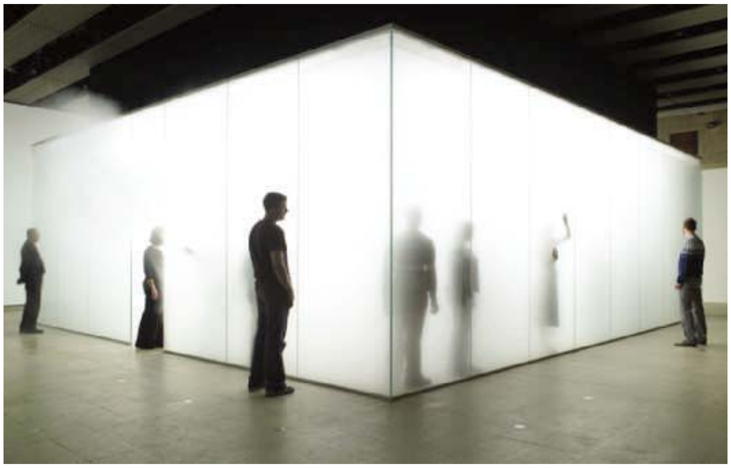
After creating a series of evocative collages from torn photographs of the Paradise's interior and drawings tracing the longitudinal outlines of its decorative elements, Putrih built *Venetian, Atmospheric* as a full-fledged, freestanding cinema. A major sculptural attraction of the Biennale, it brought Venice, inspired by Eberson, back to its origins. Before reaching the piece, though, visitors stopped at Galleria A+A near the Palazzo Grassi, which served as an orientation to the main event and included the scored drawings of the Paradise's interior.

The setting for *Venetian, Atmospheric* itself was not a crowded *campo* or the Giardini, cheek by jowl with other national exhibitions, but isolated under tall trees on the bucolic Island of San Servolo at the picturesque campus of Venice International University, the site of a former Benedictine monastery. Traveling the 10 minutes by vaporetto from Piazza San Marco, away from the hurly-burly of the city and the biennale, provided a welcome respite to clear your mind and prepare for a remarkable project.

After landing at the dock and walking through the parklike serenity of this walled island, you finally catch a view of the cinema, a pavilion with the same oval rondeur, says the artist, as the great Fenice Theater. Though it functions as a theater showing documentary films and holds an audience of 35 to 40 on its stepped rows of square seats,

Paula Deitz is the editor of The Hudson Review, *a magazine of literature and the arts, and writes about art, architecture, and landscape design.*

PHOTOGRAPHY: © MICHELE LAMANNA/COURTESY THE ARTIST AND MAX PROTETCH GALLERY



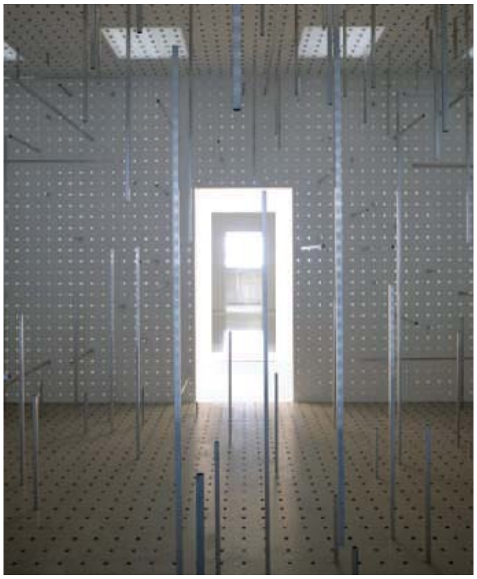
In *Blind Light*, Gormley asks visitors to enter a glass room filled with fog.

the pavilion retains a special intimacy and scale that make viewers feel they are entering an architectural model itself. On the outside, Putrih assembled a seemingly random (though actually precise) criss-cross installation of rusted trusswork bolted into place. Inside, he hung a white canvas curtain that darkens the interior and designed an inner wall with plywood baffles cut into wiggling, biomorphically shaped slats that recall the Paradise's decorative forms.

During the biennale, the pavilion served as a venue for documentary films. But the main event was between shows, as it once must have seemed to children at the Paradise Theater. The canvas curtain is drawn back, and slowly, the undulating plywood slats are brought alive by flames of gold, then red light, like a spectacular sunrise. The theater becomes a place apart from its surroundings, a regal folly in the garden. And just before the colored lights subside, the pavilion's shallow-domed ceiling grabs your attention with projected clouds that gradually dim into a starry night. Leaving *Venetian, Atmospheric* at night is like leaving one of those lively, brightly lit Venetian *campi* filled with joyous crowds and heading out into the dark, narrow, and quiet streets.

Meanwhile in London …

British artist Antony Gormley's succession of cast-iron and fiberglass sculptures molded from his own body would appear to be a self-absorbed art, but his recent exhibition at the Hayward links his particular image to the more universal theme of individual alienation within architectural surroundings. As he writes in the exhibition guide, "I think that architecture is another kind of body, another container." You can see the ideas behind his architectural sculptures in a haunting series of photographs that he took between 1979 and 2007. Entitled *Quads* (as they're grouped in fours), these images meld shades of blue with an occasional gleam of golden light. In one group, for example, figures walking on the crest of a mountain emerge from the early morning fog; a deserted power plant stands in the light of dawn; a lone cable car drifts across a dark, misty sky; and a single man waits on a brightly lit subway platform among a forest of columns. The message is one of isolation.



Aluminum rods puncture space in Gormley's *Hatch*.

Human figures abound in this exhibition, from heavy cast iron to dematerialized wire mesh, and sometimes take the measure of space in the fashion of Leonardo de Vinci's *Man of Perfect Proportions*—in one work by bending at right angles in the corners of a room. But Gormley also asks viewers to take their own measure by confronting complete isolation in his *Blind Light* installation. Anyone who has driven at night in thick fog knows what it feels like to enter this freestanding glass room filled with a dense cloud made more intense by white neon light. It takes courage to step inside, but I did. I thought immediately of Gormley's photograph of a man standing in fogbound woods not knowing which way to turn. I stood stock still, totally disoriented, and then, like everyone else, I gingerly sought an exterior wall to feel my way around. Once outside again, I watched the disembodied hands and arms of the people inside searching for solidity and thought this is what Gormley must experience when seeing visitors bring his sculptures to life and to terms with consciousness.

In an installation titled *Allotment II*, the artist proved his point that the "body is our first habitation, the building our second." Here he built a miniature city of vertical structures, each based on the measurements and features of some 300 inhabitants of the Swedish city of Malmö, adults and children. What first looked like hulking reinforced-concrete structures on a grid of streets suddenly appeared more human as their differences revealed themselves. (A good lesson there.) In another piece, *Hatch*, Gormley deals more directly with perception by enticing the viewer into a room of white plywood and Plexiglas lined with peg-board-like walls of square apertures. Inside, long and short rectangular aluminum rods spike out in every direction from the walls and floor (dangerous for more than two people at once). While most people in the room looked through the rods to see kaleidoscopic images of pixelated cubes, I enjoyed looking through the square holes from the outside to see ever-increasing circles of light.

Figures against the sky

Not satisfied with occupying just the interior galleries with his work, Gormley used the Hayward's three outside terraces as a viewing platform for his largest architectural installation, *Event Horizon*: 27 life-size casts of the artist mounted on buildings around the Hayward on the South Bank and on the horizon across the Thames far in the distance. You begin counting the cast figures nearby and then squint into the "expanding universe," a cosmological phenomenon from which he takes his title. But suddenly, there it is, all of London, appearing almost in miniature from a distance, with Gormley's figures merely pencil-thin lines against the sky, sculpture inhabiting architecture in an atmospheric theater in the round.

By constructing impermanent, illusionary, and fictional worlds with architecture, both Putrih and Gormley enlist the participation of viewers to complete their art. What remains is the memory and the perceptions gained through these experiences of imagination rather than function. ■

ONLINE: Can architects learn much from artists? Respond at ***architectural record.com/community/critique***.

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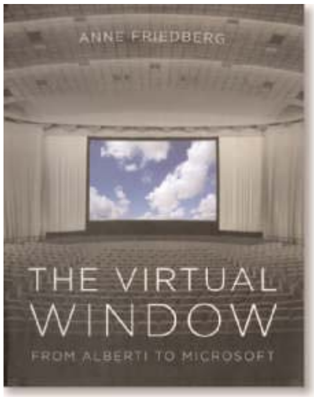
Thinking and theorizing about architecture

Books

The Virtual Window: From Alberti to Microsoft, *by Anne Friedberg. Cambridge, Mass.: MIT Press, 2006, 448 pages, $35.*



This is a dense, erudite overview of issues on visual perception and representation. Friedberg writes well and displays a mastery of theoretical topics ranging from Renaissance perspective to digital design, but the sheer amount and complexity of the material she addresses may prove daunting to even the most enthusiastic general reader. Her thesis is that there has been a profound shift in human perception from the perspectival, windowlike viewpoint of Alberti and Renaissance art to the contemporary visual field of the computer "window." *The Virtual Window* is an effort to trace the steps along the way.

It is organized into five chapters, beginning with a discussion of perspective, the tools used to draw it, the new ways of seeing it provoked, and the manner in which these ways changed architectural approaches to organizing the world. This is followed by a more rambling chapter, "Heidegger's Frame," which attempts, less coherently, to bind together the history of glass windows with theories of dematerialization from Sigfried Giedion and Walter Benjamin to Colin Rowe. Friedberg continues with a chapter on the French philosopher Henri Bergson's concept of the "virtual" and his attention to what he called the "cinematographical" aspects of thought, a topic of considerable interest still today. This leads her into an interesting brief history of theaters and cinemas. Completing the book are chapters on Paul Virilio and the "screen," Warhol's "multiple," various questions of cinematography, the well-known software innovations of Macintosh and Windows, and 100 pages of footnotes. In her book, Friedberg raises a key issue: To what extent is the viewer aware of the nature of the "apparatus," the means by which visual representations ranging from paintings through film to interactive software programs are framed and defined? In her perhaps too brief conclusion, Friedberg argues that a "new logic to framed visuality" has now taken hold, one that relies "more on the multiple and simultaneous than on the singular and sequential." Her book clarifies the continuing and recognizable links between framed, perspectival Renaissance representations of the world-as-picture and the new visual logic. *Eric Mumford*

Theories and Manifestoes of Contemporary Architecture (second edition), *edited by Charles Jencks and Karl Kropf. New York: Wiley, 2006, 378 pages, $40 (paper).*

If you are an architecture student, you should have a copy of this book. If you like to follow the intellectual life of the discipline, this book should be on your shelf, as well. Charles Jencks and Karl Kropf have assembled 144 essays written by leading architectural theorists and practitioners during the past half century.

Anyone familiar with Jencks's work as one of the foremost architectural taxonomists of our time won't be surprised by his choice of essayists for this book. They include Venturi and Scott-Brown, Rossi, Rykwert, Graves, Vidler, Frampton, Banham, Kipnis, Johnson, Eisenman, Ando, Portoghesi, Hejduk, Tafuri, Libeskind, Tschumi, Wigley, Koolhaas, Hadid, the Prince of Wales, and not unexpectedly, Jencks himself. (Charles Moore, one of this period's best architectural thinkers and writers, is underrepresented by a single essay coauthored with Kent Bloomer.)

THEORIES AND MANIFESTOES
OF CONTEMPORARY ARCHITECTURE
Edited by Charles Jencks and Karl Kropf
SECOND EDITION

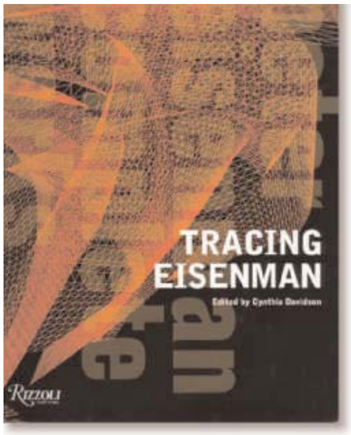
The book also includes folks outside of Jencks's usual line-up: Ian McHarg, Christopher Alexander, Dolores Hayden, Andres Duany and Elizabeth Plater-Zyberk, Greg Lynn, James Wines, William McDonough, and Hassan Fathy. Then there are the inexplicably excluded, such as Cesar Pelli, Samuel Mockbee, Moshe Safdie, Michael Pyatok, Stephen Kieran and James Timberlake, and Avi Friedman.

Jencks and Kropf organized the essays in the first (1995) edition according to four main periods they call: Post-Modern (including Post Modern Ecology), Traditional, Late Modern, and New Modern, offering no explanation for why the periods are presented out of chronological sequence. For the second edition, they added a new category, Complexity Paradigm, covering developments brought about by globalization and computers. Ultimately, these pigeonholes do not make much difference; the same authors are found in different categories. Despite his painstaking explanations of the different periods and what they mean, Jencks never defines what "contemporary" architecture encompasses. The implied definition of these collected essays is, to put it kindly, a bit loose. Would we really describe as "contemporary" all architecture completed since Eisenhower was president?

In the end, this book achieves what Jencks says any collection of theories and manifestoes must: a full range of architectural worldviews. *Michael J. Crosbie*

Tracing Eisenman: Complete Works, *edited by Cynthia Davidson, with essays by Greg Lynn, Sarah Whiting, Stan Allen, and Guido Zuliani. New York: Rizzoli, 2006, 400 pages, $75.*

Books



Intriguingly, Cynthia Davidson chose "tracing" as part of the title of this retrospective volume to satisfy her husband/subject's peculiar wish that no book with his "complete works" be published unless it be in the form of a detective novel. This book does not resemble a detective tale, in spite of the enigmatic persona and oeuvre that have made the transgression of rules Eisenman's professional habit. Greg Lynn tries in his essay to depict Eisenman as a "criminal on the run," metaphorically leaving no "traces" for those who would punish him for violating architectural convention, but the analogy seems strained given Eisenman's seemingly intentional courting of controversy.

Since this isn't a detective novel, what is it? Perhaps it's an assembly of devout panegyrics, characterized by a sophism exemplified by Davidson's opening essay, "The Absence of the Presence; or, The Void." Know any void that isn't the absence of presence? Sarah Whiting is an outstanding exception to this portentous obfuscation. She thoughtfully assesses Eisenman's major value as an intellectual agent provocateur, while noting how some of Eisenman's buildings aren't user-friendly. The other contributing architect/educators don't contextualize Eisenman's projects in a way that summons their strengths. Stan Allen shares Eisenman's appreciation of the architectural diagram as a research tool, but doesn't clarify Eisenman's. Lynn and Guido Zuliani might have offered insights drawn from being Eisenman's collaborators.

Yet the book transcends these failures by offering splendid photographs of built projects, like the Wexler Center, and finely detailed drawings and diagrams of imagined ones. These images present a phantasmagoric panorama of provocations from an architect/educator exemplifying Socratic sass. *Norman Weinstein*

Future City: Experiment and Utopia in Architecture, *by Marie-Ange Brayer, Jane Alison, Frederic Migayrou, and Neil Spiller. New York: Thames & Hudson, 2007, 336 pages, $35 (paperback).*

We may forget that some of the most imaginative designs of the 20th century owe their inspiration to a 16th-century English saint. When Thomas More coined the term utopia in his book by that name in 1516, he cleared the path for generations of architects to investigate the notion of what he called a "non-place," a sort of unachievable paradise. Though radically diverse in concept and form, most utopias have secured places in the canon of architectural history because they use architecture to improve a world gone wrong.

future city
experiment and utopia in architecture
Thames & Hudson

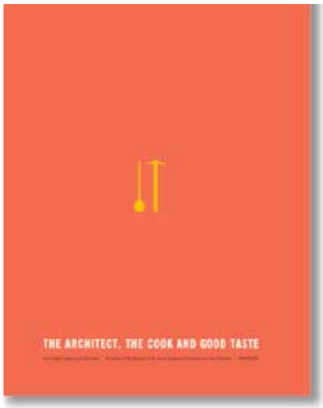
Future City: Experiment and Utopia in Architecture, which accompanied an exhibition at London's Barbican Centre in 2006, presents a broad collection of inventive designs (mostly unbuilt) from the mid-1950s to the present, including Constant's New Babylon, Archigram's Inflatable City, and FOA's Yokohama Ferry Terminal.

Because of its flexible definition, the term *utopia* can be applied to a dizzying spectrum of architectural investigations. Some of the chosen projects are a surprise, but most have been seen before. The presentation suffers from a lack of organization and a coherent narrative connecting the designs. Some subjects are grouped according to form ("inflatable city"), some according to geography ("radical architecture in Italy"), some according to art-historical periods ("Deconstruction"), and yet others according to vague concepts ("experimental living," "non-standard architecture"). Project texts are consigned to an appendix, and the editors largely fail to explain what the designs respond to or how they are related. The result is an arbitrarily grouped, miscellaneous catalog of projects.

Many of the designs engage social, political, or material issues, but the book reduces architecture to surface and shape, easily leaving the general public with the impression that architects do little more than make imaginative drawings of buildings that never get built.
John P. Gendall

The Architect, the Cook and Good Taste, *edited by Petra Hagen Hodgson and Rolf Toyka. Basel: Birkhäuser, 2007, 157 pages, $33.*

The Academy of the Hesse Chamber of Architects and Town Planners counts among its missions addressing architecture's "interfaces with other culture spheres" such as music, film, theater, and cooking. *The Architect, the Cook and Good Taste* offers the Hesse-sponsored program's explorations into the links between building and cooking, between making good architecture and preparing gourmet meals.



Like most books composed of symposia lectures transcribed into essays, the result is uneven and repetitious. (How many times must you remind your audience that cooking and architecture feed the soul as well as the eye, or that good ingredients are basic to any artistic endeavor?) The score of European essayists includes artists, architects, ethnologists, historians, cooks, and food chemists; their thoughts range from sociocultural analyses to discussions of an architect's work without any mention of food. One contributor, Claudio Silvestrin, has actually designed a restaurant, the Panatteria Princi in Milan ("My architecture can be best compared with traditional Italian cuisine," with its dearth of cream and fat, simple but tasty).

The illustrations are equally meandering and quirky. Artful pictures of buildings join photographs of sushi, potatoes, and lemons, and the butchering of a pig, not to mention a Big Mac (with fries). Giotto's *Last Supper* and Manet's *Le Déjeuner sur l'Herbe* grace these pages, along with a watercolor rendering of a Deco restaurant in London.

This *pot au feu* may not provide a workable definition of good taste, but it is provocative and lively. Swiss art historian Stanislaus von Moos spins riffs on Gehry's carp and Venturi's duck, and labels Le Corbusier's League of Nations the equivalent of fast food. At the end, *The Architect, the Cook and Good Taste* becomes an argument for slow food—sensual and environmentally and ethically sustainable. Which is not a bad recipe for architecture, either. *William Morgan*

paint on comfort.

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What's fueling the firm mergers and acquisitions trend? Growth.

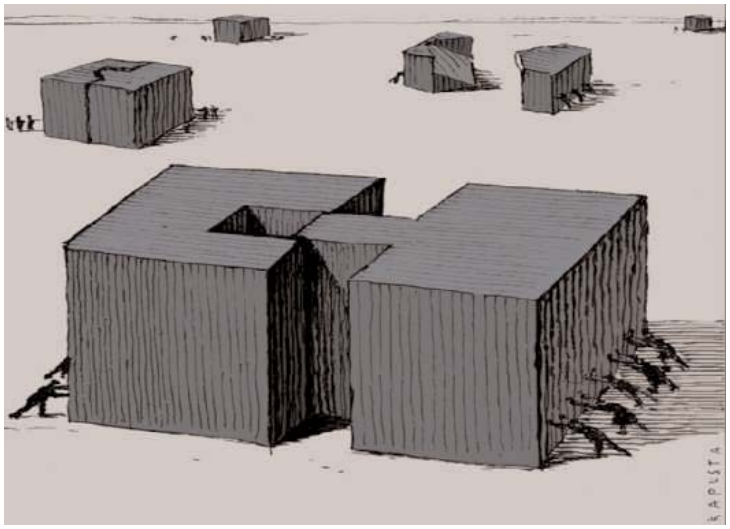
Practice Matters

By B.J. Novitski

In the summer of 2007, two large American architecture firms made news when they announced they were being sold to larger European firms. The 1,000-person RTKL was acquired by 11,500-person Dutch environmental and infrastructure engineering giant Arcadis. And, 350-person Hillier by 750-person Scottish architecture firm RMJM. Why are these firms selling? And why now? Do these moves represent a trend, and if so, what is its significance for the rest of the U.S. architecture profession?

RTKL and Hillier ranked eighth and 25th, respectively, in the 2006 Top 150 Architecture Firms [RECORD, June 2007, page 71] list, compiled by ARCHITECTURAL RECORD's sister publication, *Engineering News Record.* The firms' change in ownership follows that of 61st-ranked, formerly 100-person Davis Brody Bond, which joined the 1,700-person British-based architecture firm Aedas in 2006.

It is easy to understand why a large firm might want to buy a smaller firm. SmithGroup, for example, has successfully grown in the past 10 years from 500 employees to more than 800 today by acquiring or merging with five other firms from all over the United States (Keyes, Condon, Florance; Stone, Marraccini & Patterson; Architects Four; Tobey + Davis; and AREA Design). As a result, SmithGroup now enjoys a broader geographic reach and a greater diversity of talent. The smaller firms have presumably benefited from sharing the prestige and expanded resources of the parent firm. But why would an already large, prestigious firm like RTKL or Hillier opt to sell to an international firm? Why not form a more-equal partnership to reap some of the same advantages, as the merger of Kling and the Stubbins Associates did in 2003?



Mergers and acquisitions have been a component of business practices within architecture firms for decades. In Texas, CRS grew from a two-architect practice in 1946 to become, by 1985, the largest AEC company in the United States. They expanded by acquiring interior design, engineering, construction, and construction-management firms. Eventually known as CRS Sirrine, the company undertook environmental and infrastructure engineering projects that dwarfed its architectural work. In the process, CRS went public, becoming the first architecture firm on the American Stock Exchange.

Authors Jonathan King and Philip Langdon describe the culture clashes CRS experienced with some of the firms they acquired in their fascinating book, *The CRS Team and the Business of Architecture*. There were differences of opinion, for instance, about the size and type of preferred projects. In some cases, the owners of purchased firms took the money and ran, leaving a demoralized staff. The CRS partners eventually learned that mergers were better than acquisitions because midlevel staff could be better motivated to stay and work for a merged firm. But CRS Sirrine suffered other problems, such as the 1982 collapse of the Saudi construction industry, in which they were heavily invested. By 1994, the architecture group was sold to HOK and the rest to Jacobs Engineering. It was a sad end to what had been by far one of the profession's most innovative practices.

Anatomy of an acquisition

According to Steve Gido, a principal with the consulting firm ZweigWhite, the distinctions between the terms "partnerships," "mergers," "sales," and "purchases" can be subtle, even misleading. He prefers to call them all "external transition plans." Regardless of which term is used in the press release, the new ownership structure is probably not a true partnership. Ninety-five percent of "mergers," Gido says, are actually structured financially as acquisitions. But to promote family harmony and help smooth the coming integration, many of the deals are publicly described as mergers. So there have probably been many more outright architecture firm sales in recent years than are generally acknowledged.

There are many reasons a firm can consider selling to another entity. One is to provide a path to ownership succession for a firm headed by one or a few partners who are planning to retire soon. In many cases, the firm is sold internally to the younger generation of associates. But sometimes this is not a viable option if, for instance, the younger staff lack the capital, leadership skills, or entrepreneurial ambition to become owners.

Another motivation for selling externally, says Gido, is that it can be a quick way to grow. Although many firms are content to stay

B.J. Novitski writes about architecture and sustainability. She was formerly managing editor of ArchitectureWeek *and can be reached at bjn@efn.org.*

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small and manageable, growth has its advantages. “At ZweigWhite, we’ve been big promoters of growth: It’s exciting, it challenges people, and it enables more people to have a share of the ownership pie,” Gido says. “It expands career and professional opportunities. Organizations that don’t grow can get stale; they’re forgotten about if they’re not keeping up with their competitors.”

James P. Cramer, Hon. AIA, principal and chairman of the consulting firm The Greenway Group, is another expert in the area of ownership transition planning. He notes: “It’s a complex profession, and good leadership is rare. Consolidations can bring together leadership to create stronger firms.” He has observed more architecture and engineering firms joining recently, blurring disciplinary differences in form and process. “Now that we have single-technology platforms,” Cramer says, “this is going to require that each discipline works simultaneously and interactively, no longer linearly. This is bringing everyone on the team closer together. BIM technology is one reason there will be more integrated professional teams.” He sees mergers as a coming together of the talents of successful firms. “They’re trying to integrate as a more collaborative profession. I think the quality of the design can often be enriched because of these collaborative minds working in concert.”

Cramer says some firms sell to realize the built-up equity. He claims there is more wealth creation in ownership of firms today than in the history of the profession. “It’s because of the strength of management and leadership in practices,” he states. “The return on investment for being an owner of a design firm is often better than the ROI in other investment categories.”

Cautions during transitions

The owners of CRS Sirrine were not the only ones to recognize culture clashes as serious dangers for merged firms. Both Gido and Cramer consider this issue as important as negotiating financial terms. Selling a firm is not like selling real estate because a firm is largely an intangible collection of talent and good will. Staff who feel disrespected, or who don’t respect the work of the parent company, can walk out and devalue the sale.

According to Gido, the hardest, riskiest part of a merger is not the hammering out of terms but the integration of the resulting combined firm. “How do you link these global forces together?” he asks rhetorically. “Who’s going to be a practice leader? If one firm is organized by geography and another by market sector, how does that work? A lot of time and energy has to go into the integration process.” There can be culture clashes between two architecture firms if one takes pride in high-end libraries, for instance, and the other cranks out chain stores. Or one firm may be internally competitive, while the other is more collegial. One way to maintain the cultural identity of the combined firms is to make sure the leaders remain even after they’ve benefited financially from the sale. Gido says, “The real challenge is to get them motivated to grow the organization under the umbrella of a new, larger organization.”

The Greenway Group has developed a method to evaluate firm compatibility. Their proprietary LEAP Analysis tool measures firms on leadership, empowerment, accountability, and processes. The evaluation looks at the culture of an organization through the quality of financial management, operations, marketing, and professional services. It probes questions such as, “Is the leadership of the organization steady and strong and without an alienating, egotistic pride?” and “Is there healthy rapport, respect, and admiration among members of the staff?” Once the firms considering a merger have undergone this evaluation, Greenway can graph the results on a diagnostic scoring sheet and produce an overlay indicating how likely the firms are to be able to work well together. Cramer says this comparison is useful in helping prospective partners assess the risks of culture clashes and predict whether the merger will be exciting or a turnoff for staff.

An article in the August 2007 issue of *Principal’s Report*, a publication of the Institute of Management & Administration, suggests several ways to ease the transition by keeping key staff happy. Open communications are important, including honesty about who is likely to lose their job in the combined firm. The article advocates “rerecruitment,” offering challenging new positions to existing staff. Retention bonuses can be useful, but only if they are tied to ongoing performance. Timothy J. Galpin, of Katzenbach Partners, is quoted: “Managers will be doing well to have retained 80 percent of the employees they wanted to keep.”

Should you sell?

Given all the apparent advantages of successful sales and mergers, how can a firm evaluate if it’s right for them? According to Cramer, if the sole owner of a firm is close to retirement, it’s probably the wrong time to sell. He notes, “We like to see an ownership transition plan designed five to 10 years prior to retirement, whether it’s an internal or external transition.”

Nevertheless, the number one reason AE firms decide to sell, Gido believes, is because they can’t put together an effective internal ownership transition plan. “A lot of small firms sell because they don’t have the managerial talent, the recruiting resources, the financial resources to compete. For those firms (fewer than 200 people) it is attractive to join forces with larger firms because they may offer more opportunities.

Selling may also be a good option, says Gido, for midsize firms with $75–500 million in annual revenue. “They’re too small to compete with national firms to get existing client work or lack broad leadership and financial resources. But they’re too big to be nimble, to compete with the 50-to-200-person firms who are dedicated to a certain client sector or geographic region. I think these firms have to decide which strategic direction they want to go.”

As the examples of RTKL and Hillier show, a firm suitable for selling is not necessarily small or weak in leadership. Indeed, according to Cramer, sometimes a smaller firm will buy a larger firm to quickly develop the capacity to address a strong backlog. Or a large firm may want to buy a small one because the smaller firm has stronger leaders, who will become top leaders of the merged organization. Underlying all these decisions, Cramer advises, should be the goal of improving future service to clients.

Firm salability is the focus of Paul Collins, managing director of Equiteq, a firm specializing in mergers and acquisitions in the consulting industry. His article in RainToday.com, “11 Must-Dos for Creating a Highly Profitable (Highly Sellable) Firm,” cites the strengths a firm should have if it expects to profit from a merger. He lists quantitative factors like a work backlog and repeat clients and qualitative factors like prominence within the profession and a strong marketing history. Depending on the strength of these factors, the sales value of the firm could range from 5 to 15 times the firm’s annual profit.

Do the Hillier and RTKL acquisitions foretell a trend? The experts think so. The globalization of the construction industry makes it desirable for large firms to have a presence in many locations. The currently weak dollar, compared to European and Japanese currencies, makes U.S. firms attractive purchases for large international companies. There may once have been “conventional wisdom” about architecture firms being poor investments, but the booming domestic construction economy, under strong architectural leadership, has weakened that truism. Don’t be surprised by news about more changes in firm ownership soon. ■

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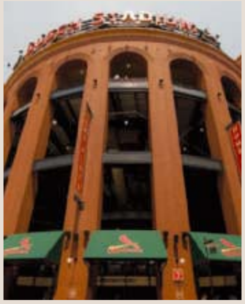

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Trade Show Review Chicago • Coverings

This year in Chicago, more than 37,000 people attended Coverings, America's largest ceramic tile and stone trade show, with architects' and designers' numbers nearly doubling. At the show, manufacturers and distributors unveiled new green products as well as patterns inspired by textiles. *David Sokol*

1 Matte-metal mash-up
DesignTaleStudio made the floral pattern of its Platinum tiles jump out from the subtle background by adding the namesake metal to the glaze. Rein Ceramiche, Casalgrande, Italy. www.refin.it **CIRCLE 200**

2 Likable Leather To produce its recycled leather tiles, the Earth stewards of EcoDomo collect scraps from furniture, shoes, and other tanneries, mix them with natural rubber and Acacia bark, and reform them into ⅛"- and 1⁄16"-thick sheets that emit no detectable VOCs. EcoDomo, Rockville, Md. www.ecodomo.com **CIRCLE 201**

3 Natural feeling In an American take on the fabric trend, Stonepeak embraces natural materials with its interpretation of Grey Wool. Stonepeak Ceramics, Chicago. www.stonepeakceramics.com **CIRCLE 202**

4 Inner glow The Lumenaire Tile, a glass tile combined with energy-efficient fiber optics, creates backlit borders and accents. The tiles are mounted in conduit trays and can support 100,000 hours of continuous illumination. Tylerco, Newport Beach, Calif. www.lumenairetiles.com **CIRCLE 203**

5 Sleek streaks This series of tiles in 2' x 2' and 1' x 2' standard sizes, features classic herringbone and pique patterns in popular metallic finishes, including platinum. GranitiFiandre, Castellarano, Italy. www.granitifiandre.com **CIRCLE 204**

6 Buena Vista cement club The antique cement-tile floors that brighten Cuba's interiors are being lost to neglect. Jorge Aguayo Saladin recorded the designs for the Cuban Heritage Collection from crumbling buildings in Havana and Camagüey, and now reproduces the handmade tiles with partial recycled content from a facility in the Dominican Republic. Industrias Aguayo, Santo Domingo, Dominican Republic. www.aguayo.com.do **CIRCLE 205**

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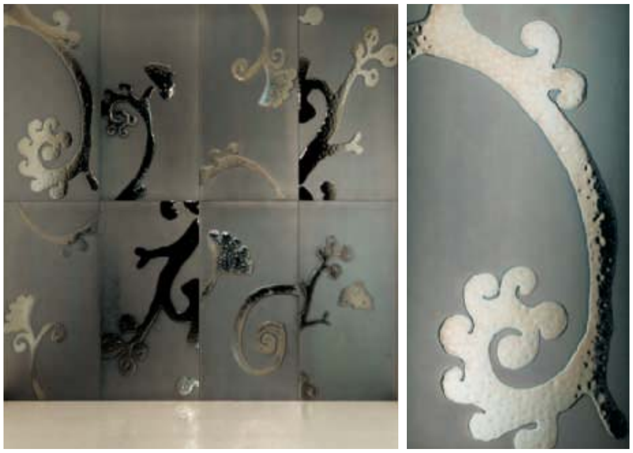
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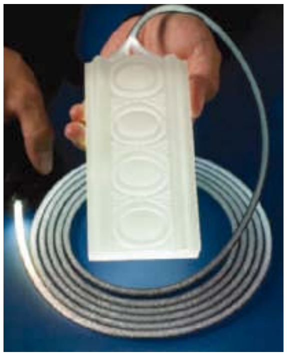
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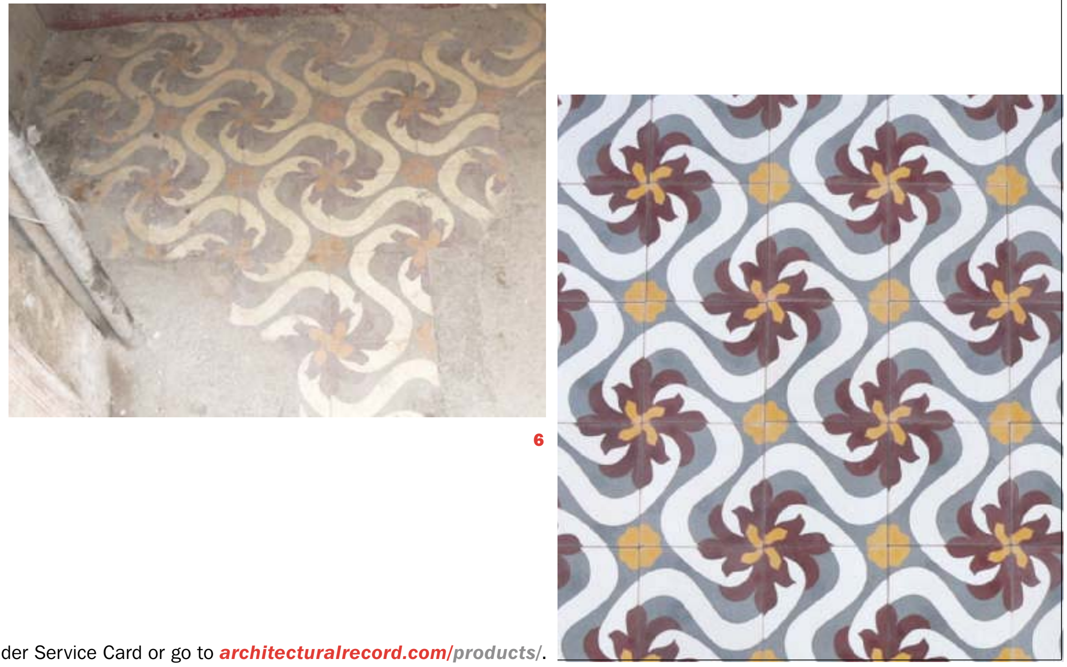
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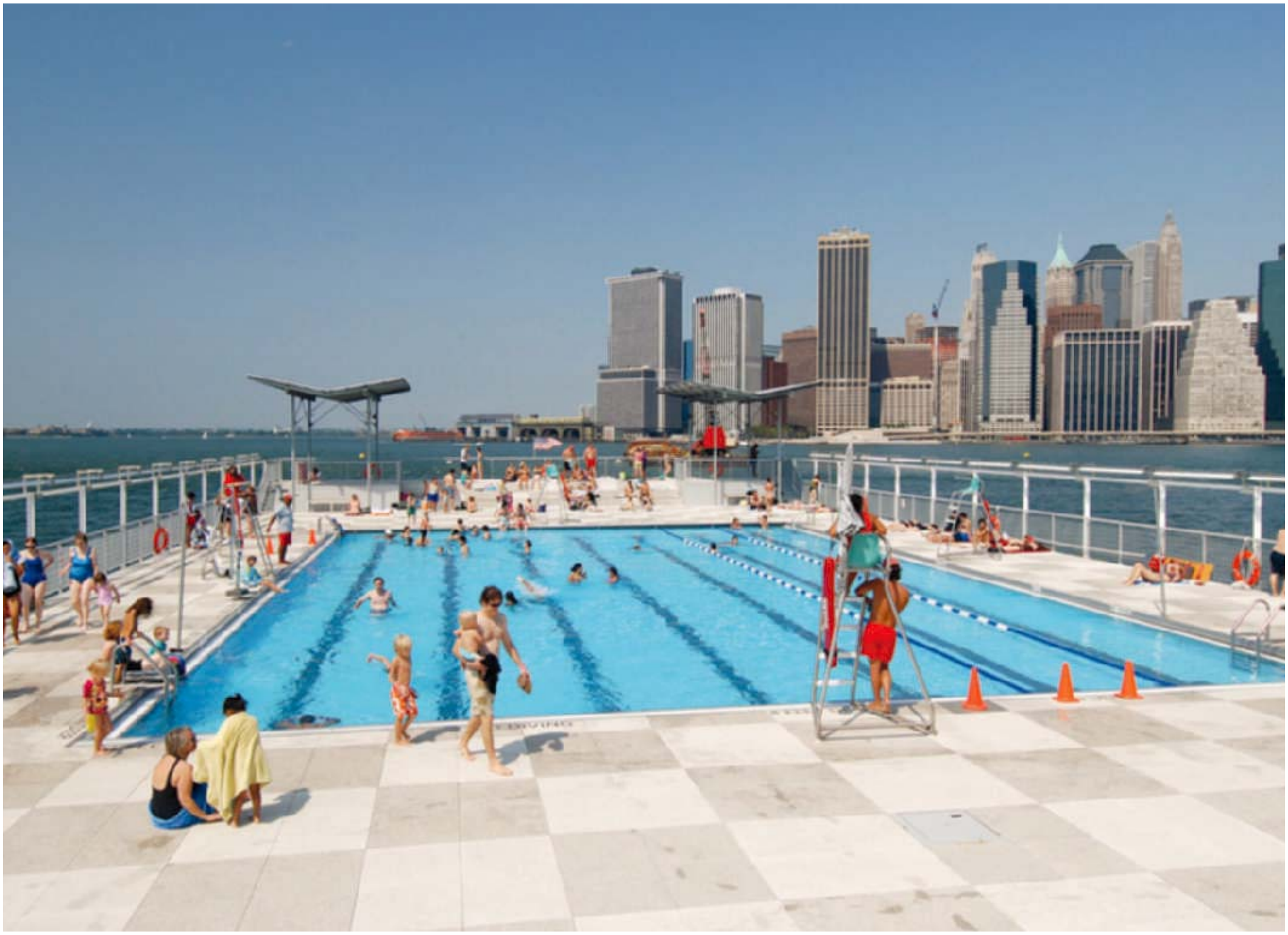
Snapshot



PHOTOGRAPHY: © PHILIPPE BAUMANN, EXCEPT AS NOTED; JULIENNE SCHAER (BOTTOM)

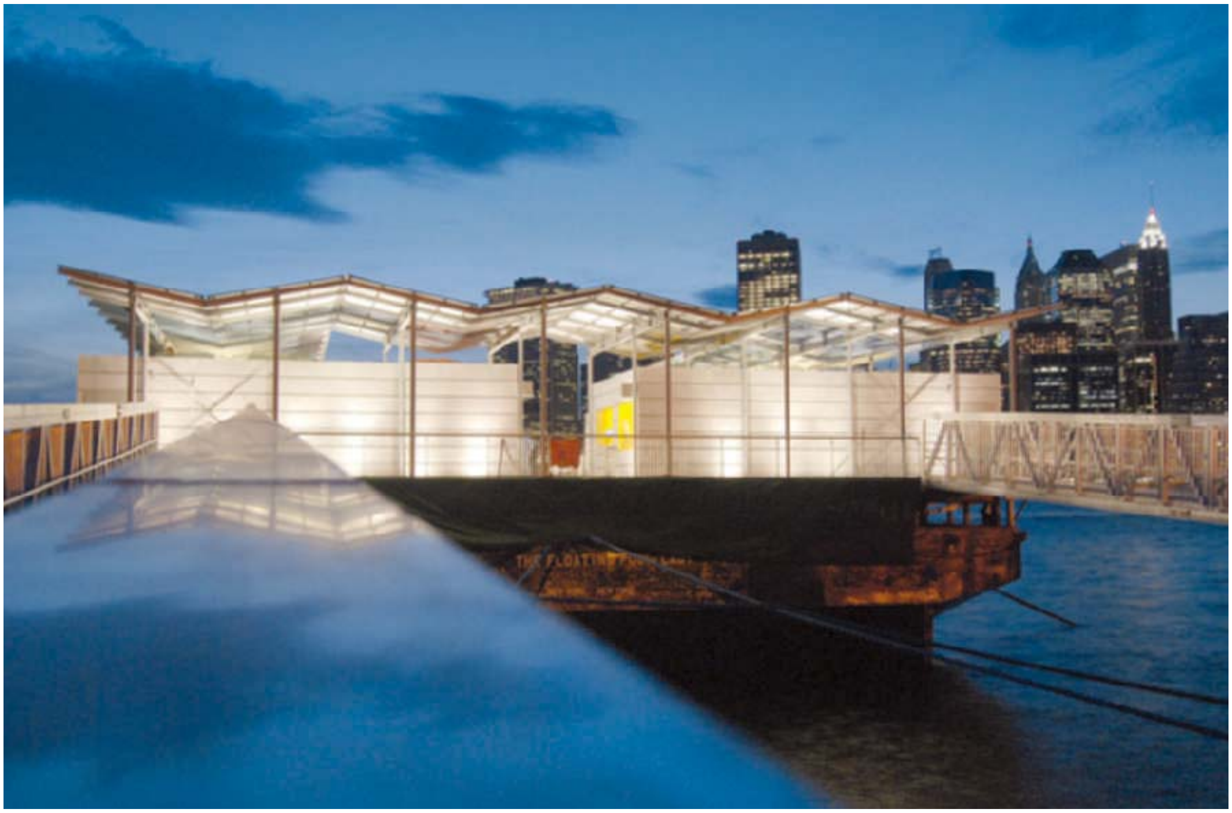
A floating pool drops anchor in Brooklyn

By Beth Broome

Swimming in New York City's East River has never been so alluring. Late last June, a barge hauling its unusual cargo of a 25-meter, seven-lane swimming pool moored along the Brooklyn waterfront and, since then, has hosted tens of thousands of New Yorkers looking to escape the summer heat.

The facility, named The Floating Pool Lady in honor of its biggest champion, Ann L. Buttenwieser, is the result of a vision the urban planner and historian has worked for almost three decades to realize. While researching her dissertation on the history of the Manhattan waterfront, Buttenwieser came across the floating bathhouses that dotted the borough's rivers in the 19th century. Inspired, she set up the Neptune Foundation with the mission of creating a prototype for a portable pool to provide, free of charge, much-needed recreational facilities for underserved communities.

Buttenwieser called on Manhattan architect Jonathan Kirschenfeld, who had related experience, having designed a 600-seat outdoor floating theater (as yet unrealized). Buttenwieser was a hands-off client, says Kirschenfeld. Beyond the standard programmatic specifications for a swimming pool, her only demand—in light of her strong belief in the coexistence of commercial and recreational interests on the urban shoreline—was that the barge relate to the existing industrial surroundings.



The pool, sunk into the former cargo barge's hull, offers stunning views of downtown Manhattan and the New York Harbor (prior page). New components provide a pleasing counterpart to the barge's rugged exterior (top). The changing-room pavilions create a courtyard that features a children's spray pool and looks down onto the pool below (above).

Originally, the plan was to create the facility from scratch. Instead, responding to rising steel prices, the foundation purchased an old, 260-foot, single-hull cargo barge in Louisiana, where marine architect C.R. Cushing & Co. completed the mechanical/electrical/plumbing and heavy steel work (go to archrecord.construction.com/features/ to view excerpts of a film documenting the pool's construction). Steel work included erecting the pavilion structures and cutting the opening for the pool, which involved dropping a section of the original deck down to form the pool's floor. The barge was then towed by tug up to Brooklyn, where final retrofitting was completed before it was towed again to its new home a few piers away on the site of a forthcoming waterfront park. "Building in two places with two different contractors and shipyard technology was definitely an interesting learning experience," says Kirschenfeld modestly.

One accesses the barge, a rugged, sea-worn vessel, by way of two gleaming aluminum gangways and arrives at a court, formed by a series of pavilions, with a children's spray fountain at its center. The pavilions sit under a single canopy of gently pitched galvanized corrugated steel decking and house changing rooms, bathrooms, a snack bar, manager's office, and reception. The modules, with their truncated pyramidal roofs with openings at the top, are made of steel plate painted inside with bright hues and clad with gray cement board spaced so gaps reveal the angle stiffeners behind. A balcony provides views onto the pool below, which is accessed by two long ramps that lead out from both the men's and women's changing rooms and cantilever, along with the rest of the pool deck, 4 feet out over the sides of the barge. (The cantilevers are the result of adapting the original design to the narrower, repurposed vessel.)

The 4-foot-deep steel pool itself is sunk into the barge's 16-foot-deep hold, once used for ballast, and surrounded by precast-concrete pavers that sit 5 inches over the original deck. Two winglike shading pavilions flank a set of stadium steps that grace the bow, providing space for bathers to take in the pool scene or gaze out toward the downtown Manhattan skyline, the Brooklyn Bridge, and the Statue of Liberty out in the harbor.

As Buttenwieser had envisioned, the Floating Pool Lady fit right into its gritty environs, mimicking the linear forms of the neighboring warehouses. But following Labor Day, plans dictated that the barge pack up and head to New Jersey for the winter. It will return, however, perhaps to a port of call in another of the city's boroughs, as soon as the next swimming season beckons. ■

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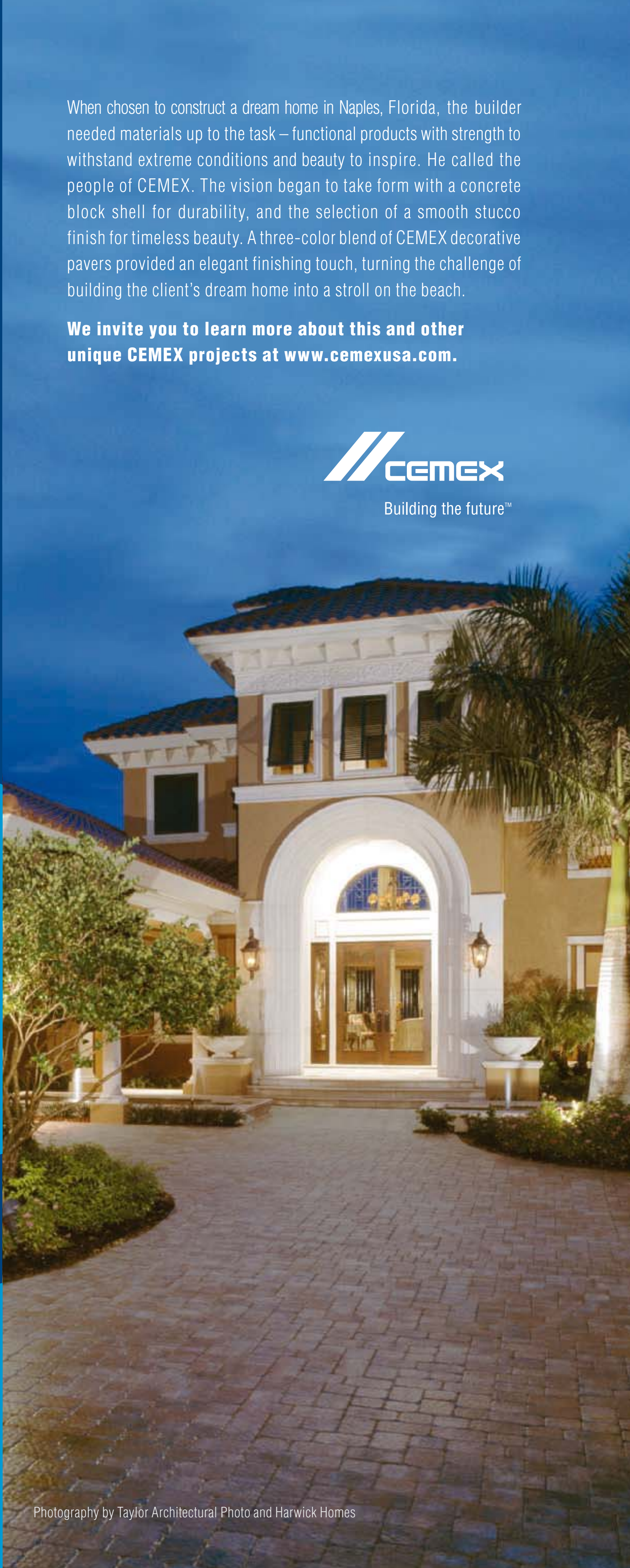

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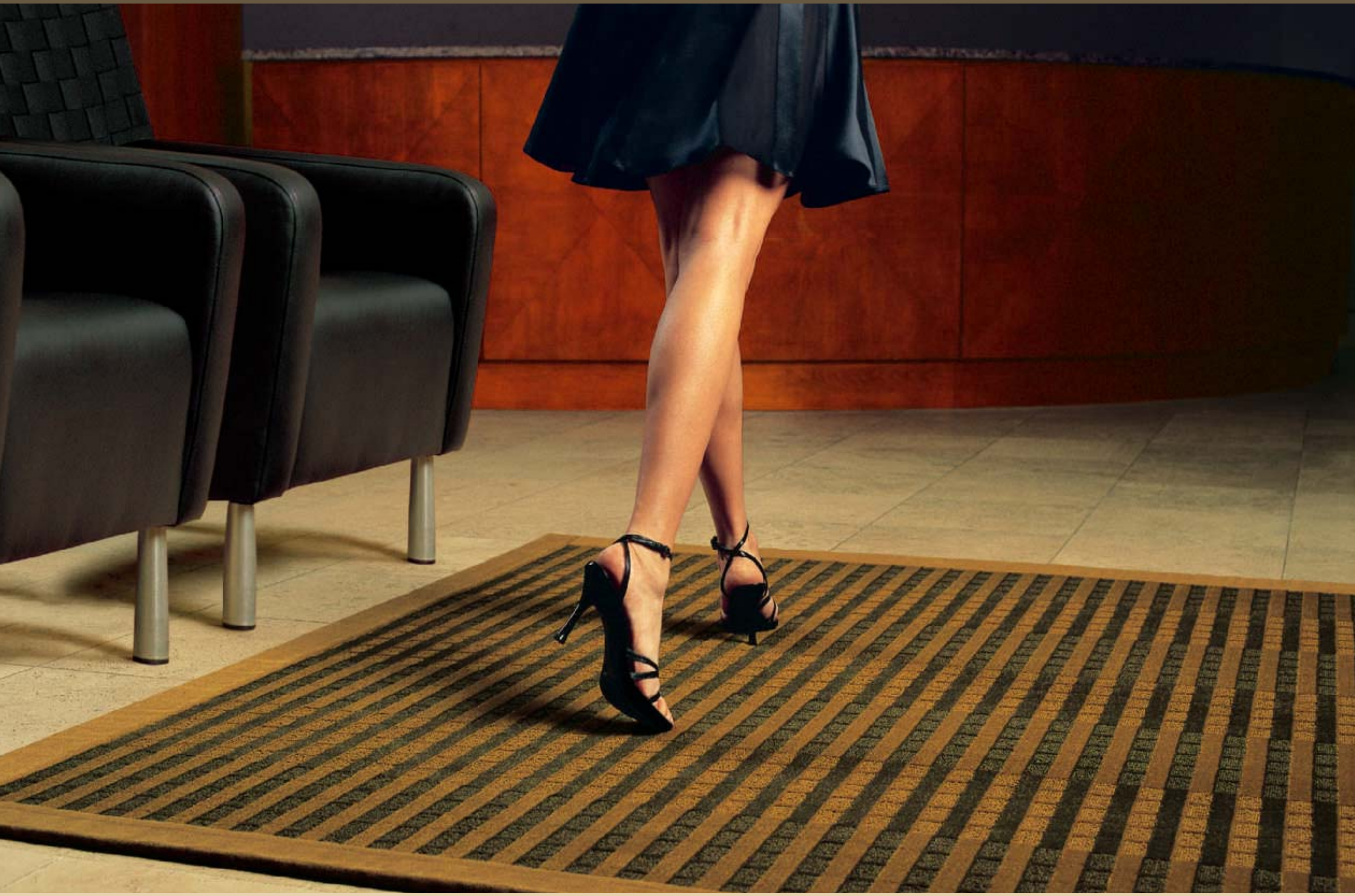
smashing, darling



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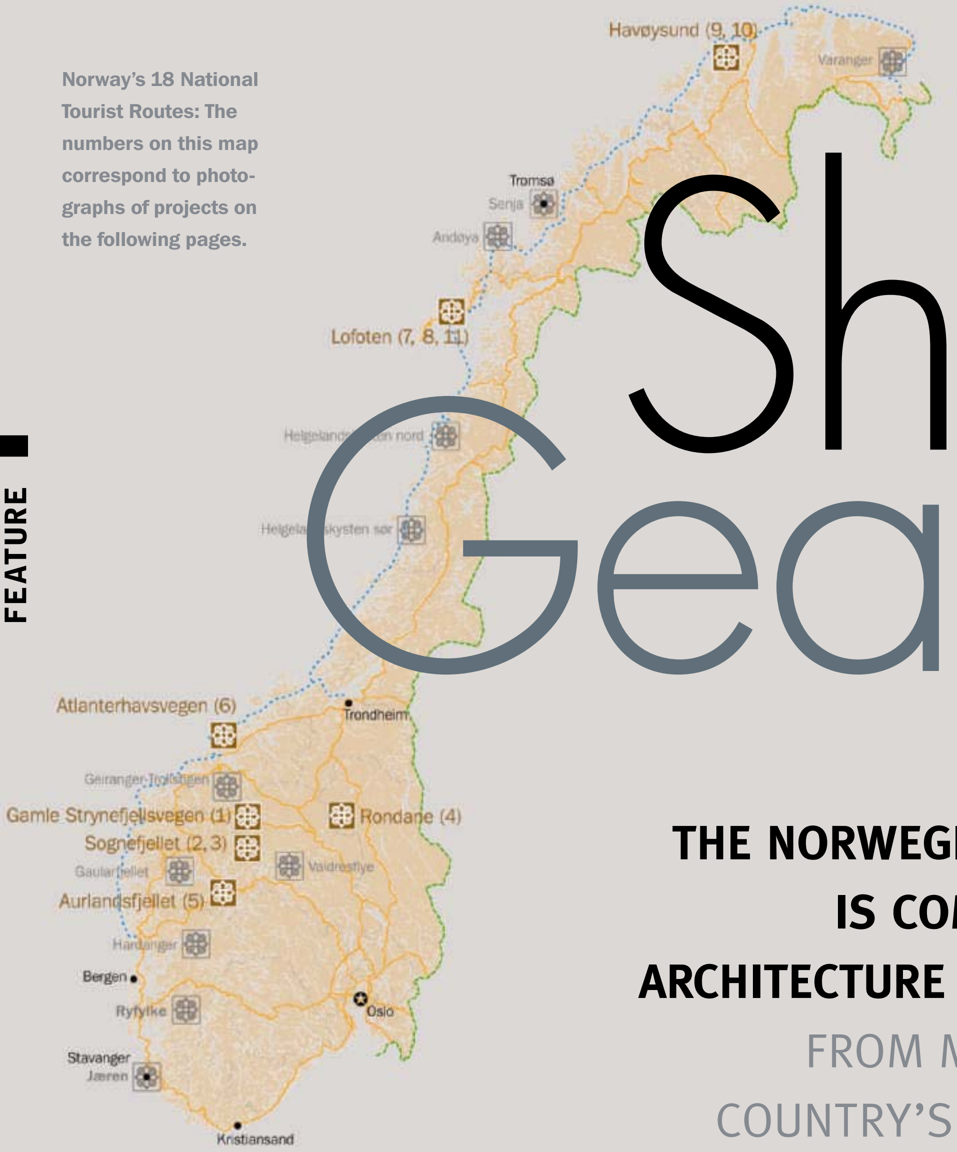
Norway's 18 National Tourist Routes: The numbers on this map correspond to photographs of projects on the following pages.



Shifting Gears

THE NORWEGIAN GOVERNMENT IS COMMISSIONING DISTINCTIVE ARCHITECTURE TO LURE TOURISTS FROM MAJOR HIGHWAYS TO THE COUNTRY'S LESS BEATEN PATHS

By David Sokol

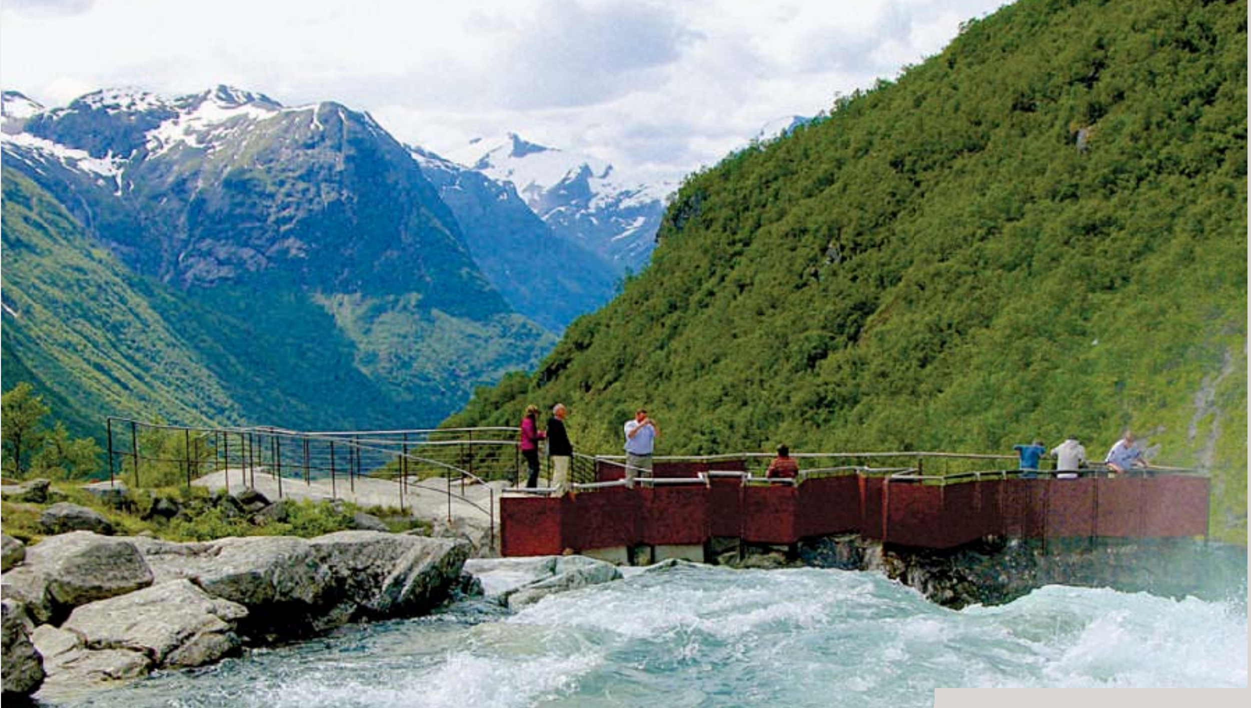
To drive from Lillehammer to Hjerkinn, most people take Norway's E6 highway. The valley passage features sturdy pines, stands of fluttering white birch, and fields of dandelions—as well as an 80-kilometer-per-hour speed limit, about as fast as this Scandinavian country permits. Or you can choose Rv. 27, as I did last June. A steep switchback snakes past thimble-size villages and recreational vehicle parks, then slowly meanders through the exotic sub-Arctic landscape of the Rondane mountains, where moss and scrub juniper punctuate what's left of spring snowpack. The temperature has dropped 10 degrees in just one hour, a distant patch of gray sky will soon scatter hail across my windshield, and the Earth takes on a menacing aspect. The detour is worth it.

Toward the northern end of Rv. 27, as it descends through a gentler alpine habitat, a newly completed rest area beckons a stop and a stretch. Three other cars already have unloaded their weekenders into the steep forest, while hidden among the trees, the year-and-a-half-old Sohlbergplassen viewing platform welcomes less intrepid tourists. Two ribbonlike walkways connect the parking lot to this poured-concrete structure, which weaves around the pines. Steel floor grates ensure that rain reaches the area below the platform to quench the trees' thirst, and pilotis capture every angle but the 90 degrees of the rod-straight trunks.

Sohlbergplassen, the work of Norwegian architect Carl-Viggo Hølmebakk, was built as one component of the National Tourist Routes Project. This $200 million, publicly funded initiative is being undertaken by the Norwegian Public Roads Administration to boost automobile and RV tourism on 18 secondary roads that trace beautiful landscapes. Sohlbergplassen is one of 180 already completed works—all of the program's 400 scenic overlooks, public bathrooms, picnic areas, and other sites should be done by 2015—and its design and execution encapsulate the strongest features of the project, from fostering young talent to an insistence that architects innovate in a way that celebrates the landscape.

To learn about the project's origins, I double-back to Lillehammer and a faded green 1960s-era office building. There, Jan Andresen, trained as an engineer, and an employee of the roads administration since 1981, is approaching his ninth year as head of the tourism initiative. He has the demeanor of a high school physics teacher, but don't trust the unassuming surface. When he helped initiate the Tourist Routes on a trial basis during the mid-1990s, Andresen, then a lower-ranking project manager, took some of the greatest risks in commissioning young architects to prove the effort's potential.

David Sokol is a freelance writer and frequent contributor to RECORD.



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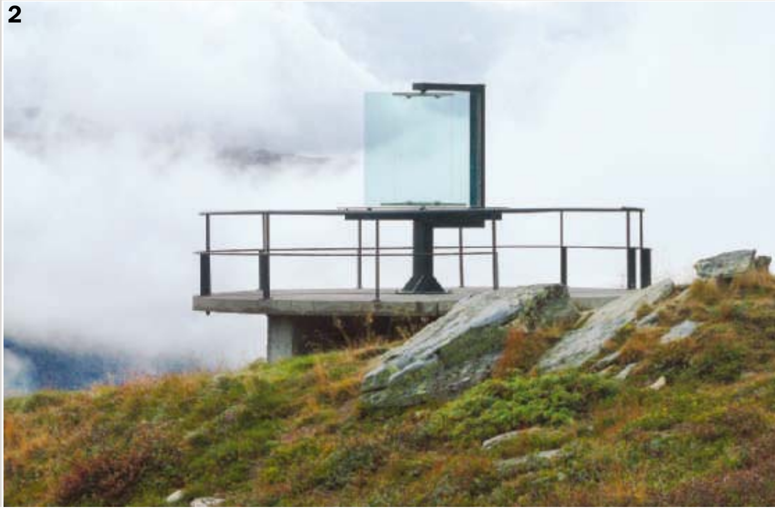

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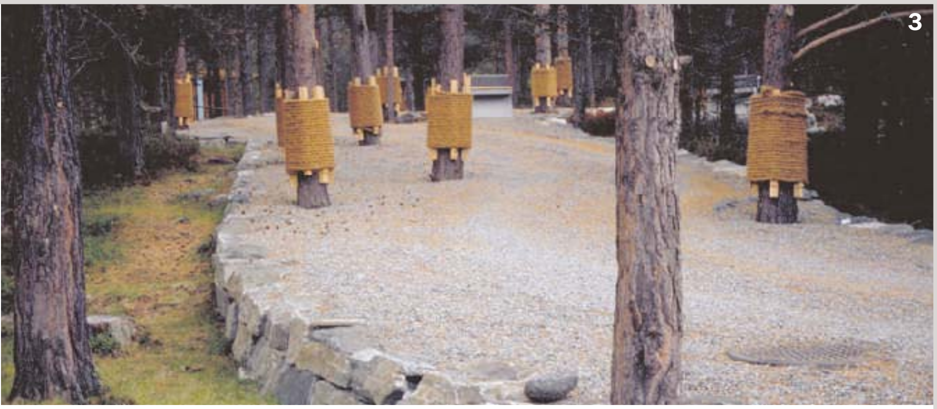

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1. The Viderseterfossen waterfall is located on Gamle Strynefjellsveg, one of four trial roads that launched the National Tourist Routes Project in the mid-1990s. Oslo-based architecture firm Jensen & Skodvin outlined a natural outcropping in folds of Cor-Ten steel to replace an unsightly barrier fence. **2.** Carl-Viggo Hølmebakk designed Sognefjellet's Nedre Oscarshaug lookout. He would later design the highly acclaimed Sohlbergplassen. **3.** Jensen & Skodvin also designed the rest stop at Liasanden, on the Sognefjellet trial route. Cars and pedestrians share space on a datum dotted with salvaged trees.

PHOTOGRAPHY: © HEGE LYSHOLM (1);
NILS PETTER DALE (2); COURTESY JENSEN & SKODVIN (3)

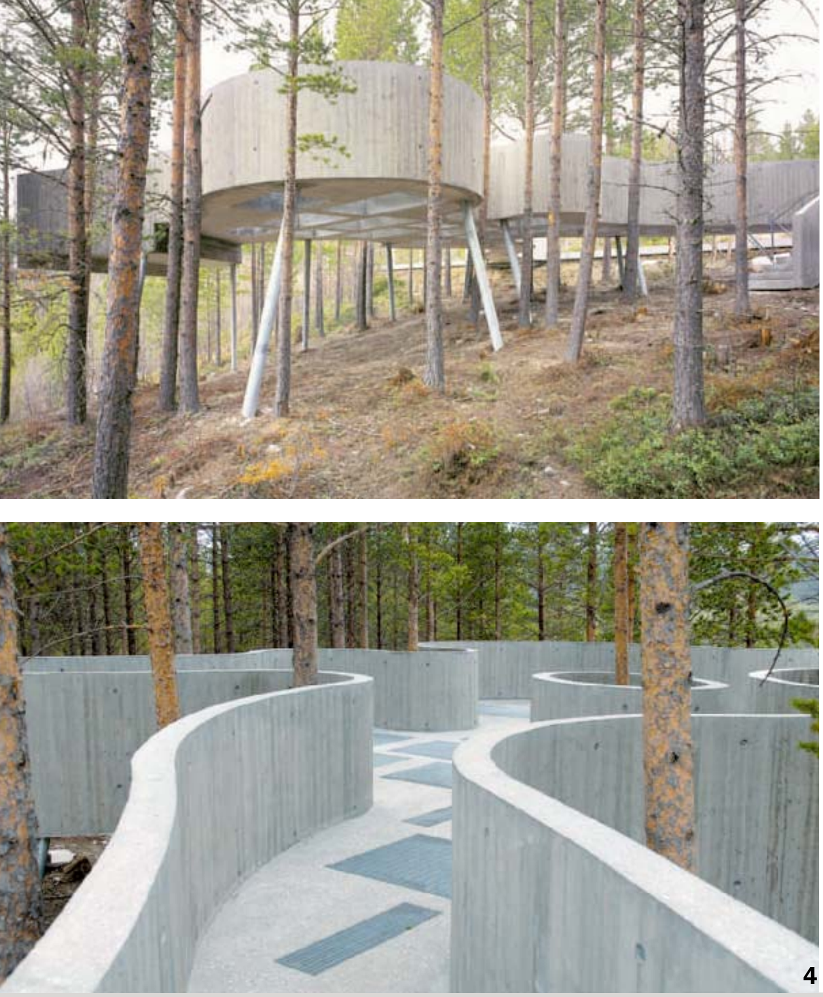
In 1993, when the trial project began, there was room for experimentation, as long as someone dared to ask for it. The first person to do so was Siri Legernes. An architect employed by a government office largely composed of engineers, she was put in charge of four projects and devised the idea of creating dynamic attractions rather than well-situated parking lots. Of the four roads, Legernes assigned Andresen to the Sognefjellet and Gamle Strynefjellsveg routes. At the time, Oslo-based architects Jan Olav Jensen and Børre Skodvin had won just enough commissions to start their own office. Among them was a competition to build a public restroom at Liasanden, which sits near one terminus of the Sognefjellet road. The ensuing collaboration between Andresen and Jensen & Skodvin sealed the road administration's culture of moxie.

"The client had decided that we should create a system of accessories, like benches and toilets, but we thought there should be a different approach," Jensen explains. While certain furniture pieces would be consistent from place to place throughout the entire road, "we proposed that everything that touched the ground should be looked upon as an architectural project and treated individually." For Liasanden, that meant commenting on the typical treeless parking lot: Jensen & Skodvin created a raised-gravel "side road" that preserved all the site's big trees, which the architects wrapped in rope bumpers. "I still think that was a really good decision," Jensen says of his rebellion. "Now there's a happy anarchy in the tourist project, because everybody is designing their own different things."

Asked why the government would choose to fund a happy anarchy, Nina Berre, director of architecture at the Norwegian professional society Norsk Form, responds by pulling out a clipping from the newspaper *Aftenposten*. It's a survey that ranks Norway 14th in its appeal to tourists worldwide. "We're famous for nature, but people aren't so interested in it," Berre notes. If there are only so many times a person can look at lush fjords and snowcapped mountains without becoming indifferent, the government reasoned that perhaps architectural intervention could add a degree of insight and uniqueness to these vistas.

Tourism is an increasingly vital component of the national economy, adds Hege Lysholm, a spokesperson for the Tourist Routes. "Now that fishing and agriculture are becoming more and more organized, it has become more difficult for rural residents to make a living," she says. Tourist roads, in other words, are really about economic development—an exercise in dispersing the wealth accrued by Norway's oil and natural-gas sector.

But the Tourist Route projects are somewhat paradoxical. If you're not looking for them, in fact, you might miss some of these attractions entirely. That's partially Andresen's doing. He chose roads that



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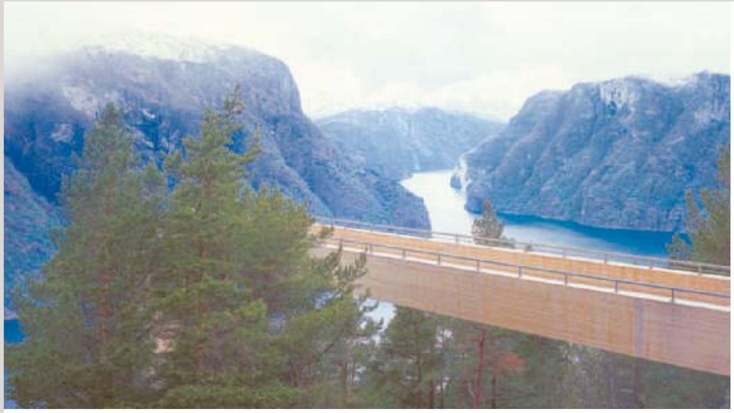

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4. The form of the Sohlbergplassen platform was generated directly by landscape conditions: It meanders around existing trees, and only one specimen was removed for construction. **5.** Stegastein, on the Aurlandsfjellet road, juts out from a switchback and folds underneath itself. The lookout gives viewers the opportunity to gaze at a long stretch of fjord, and gives them the impression of hovering in air.

exemplify the Norwegian landscape, and the roads administration then commissioned signature buildings for only a few signature sites. Geiranger-Trollstigen, one route still in development, confirms that scenery comes first. Lysholm has supplied me with a map for the drive. Wherever a light green dot demarcates a future construction site, there is just enough of a gravel shoulder or matted-down grass patch proving the area's gravitational pull for amateur photographers. Here, the water is magnificently clear and tinged in a mineral-laden celadon. There, a perfectly framed view appears of the massive waterfall that peaks at Trollstigplatået. Click, click.

Besides nestling into beautiful scenes, building sites also represent important cultural milestones or problems solved. Sohlbergplassen, for example, captures the exact view that the Norwegian artist Harald Sohlberg painted in his 1914 *Winter Night in the Mountains*, which the National Gallery, in Oslo, has in its permanent collection. "Everybody was stopping at this dangerous turn and we needed to control that," Lysholm says of a spot on the Aurlandsfjellet road. The solution was Stegastein, which not only includes an audacious lookout platform designed by Saunders & Wilhelmsen, but also a parking area and public bathroom carved into a switchback.

Rather than create icons, tourist-route architects have aspired to a dialogue with nature. Holmebakk's Sohlbergplassen is poetic and light-handed; the structure wraps around the site's existing trees, and only one specimen was felled during construction. In its five tourist-road projects, the Bergen-based architecture firm 3RW created modest forms that express man-made intervention materially. Underneath the concrete platforms of Ørnesvingen, an amber-colored sheet of acrylic cantilevers over a canyon, redirecting snowmelt into a waterfall. Flydalsjuvet, located on the Geiranger-Trollstigen road, repurposes logs from a neglected farm building and stacks them atop a sandblasted glass base. Askvågen, one of three works already finished on the Atlanterhavsvegen road that trails upward from the small fishing village of Bud, features a short, ribbonlike Cor-Ten stair attached to a granite jetty.

Other projects play counterpoint to the landscape. A bird blind and bicycle-storage house along the Lofoten archipelago route, designed by architects 70º Nord, are rectilinear toys in a rugged landscape. The Aurlandsfjellet platform at Stegastein is a V-shaped surface of pine that curves underneath itself, leaving the viewer dangling precariously in the sky.

Such intelligently modest work comes from the hands of young talent. Norway's usual suspects, in fact, are barely involved in the tourist roads: Snøhetta is working on a single parking area for campers, and Sverre Fehn's name isn't mentioned. Even mid-career practitioners such

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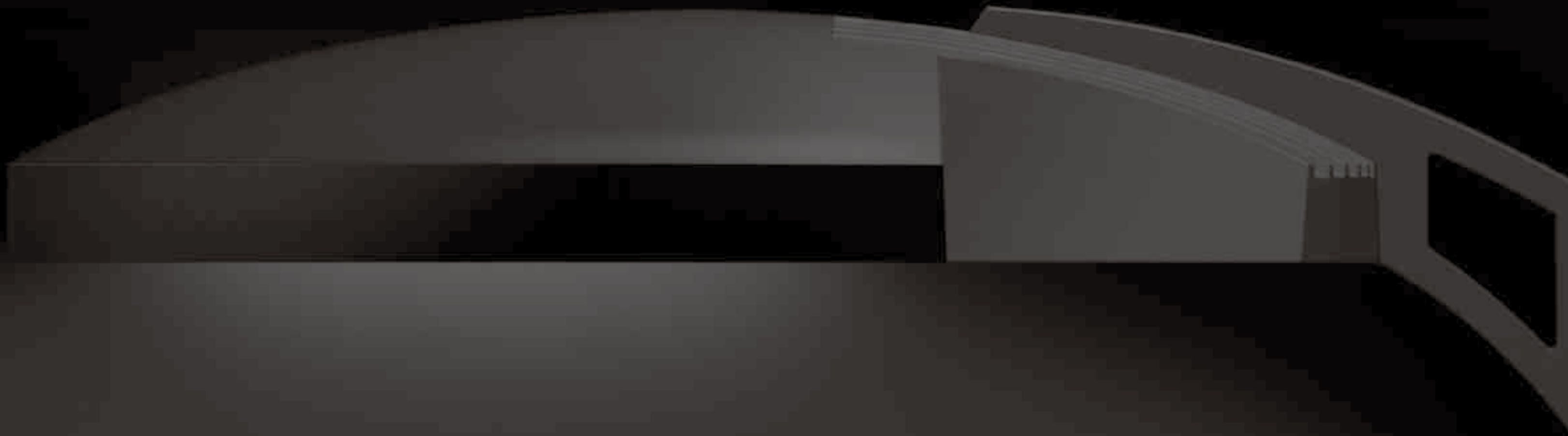

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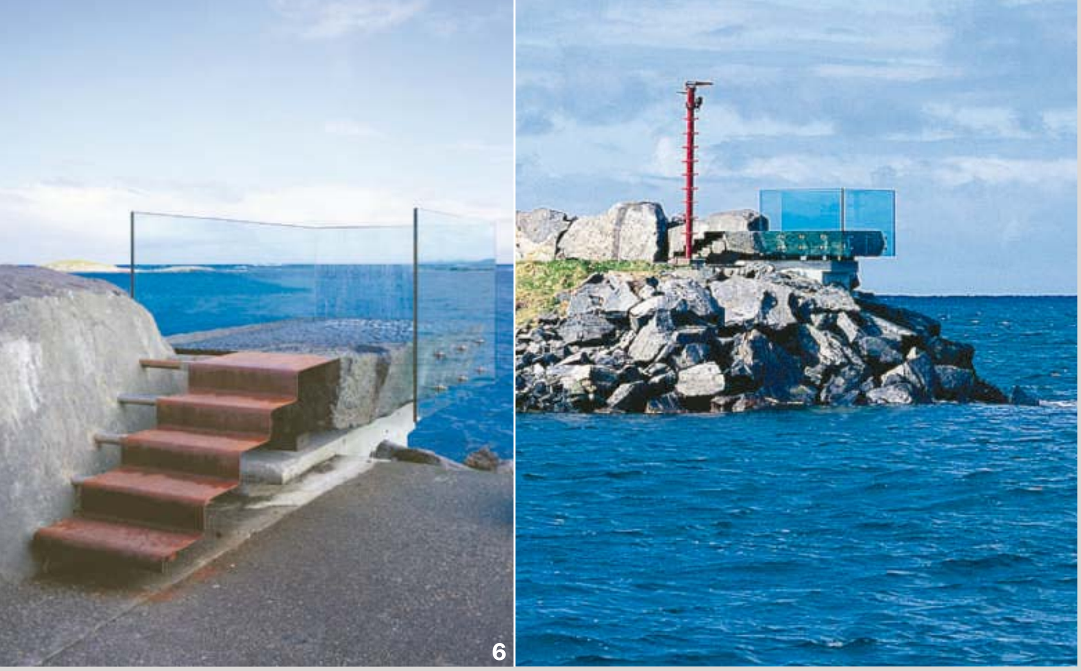
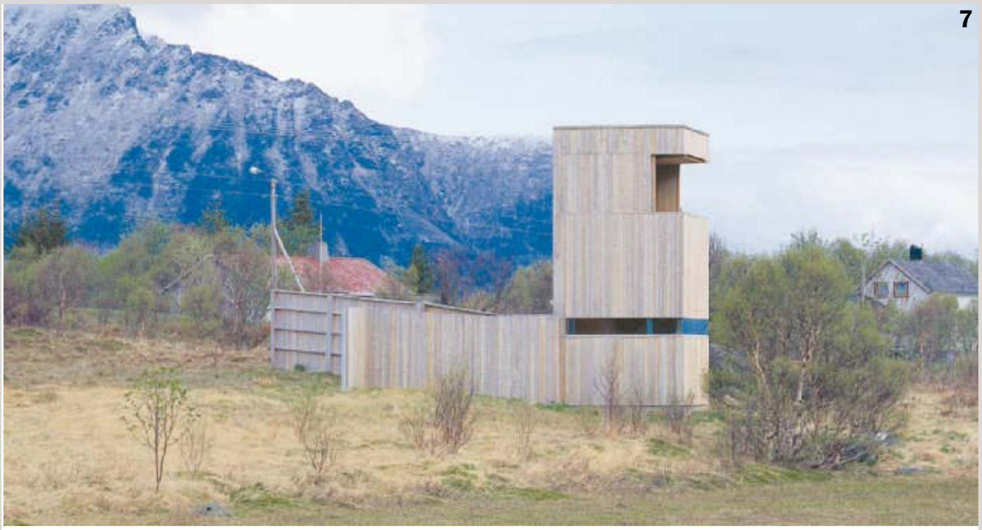
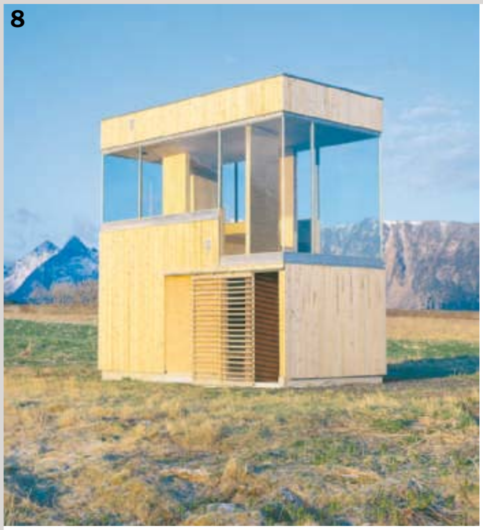


6. Among 3RW's five Tourist Routes projects is Askvågen, on the Atlanterhavsvegen route. The observation deck appears sculpted from the jetty, except for a ribbon stair made of Cor-Ten. **7.** For the bird-watching towers on Lofoten's Skjerpenvatnet and Gårdsvatnet routes, 70º Nord used a strong steel structure to resist vibration and minimize disturbance. The cladding is untreated wood. **8.** The Lofoten route also features a 70º Nord–designed bicycle-storage shed that includes rooms for food prep and resting.





as Sixten Rahlff, a partner in 3RW, admits that his office is aging out of the program. Andresen's team has taken pains to launch newcomers rather than celebrity architects. For young architect Camilla Langeland, the break came in 2002, shortly after she graduated from the Oslo School of Architecture and Design. "My thesis juror just recommended me as best in my diploma class," Langeland remembers. "Then they gave us two projects." By 2005, she and three of her classmates had quit their jobs to work full-time under their own shingle, Pushak Arkitekter.

One of Langeland's partners, Sissil Morseth Gromholt, says the roads program's leaders are open to architects testing their limits. At Snefjord, a site along the far northern Havøysund route, Pushak was commissioned to replace an existing slate windscreen and log benches with more modern versions. "We didn't want to do that," Gromholt says, because blocking the wind also obstructed the best views. Instead, Pushak integrated the functions into two-sided, steel-and-wood boxes "where you can place yourself according to the view or to the wind. It's quite simple, but it was a radical change for the program."

Although Gromholt says her firm's work on Tourist Routes has helped it earn spots in other competitions, it is perhaps too soon to say if the program will propel Pushak to fame more quickly than a typical array of single-family houses and paper architecture. If past experiences provide any indication, though, the projects may deeply inform the young architects' formal and conceptual outlook.

Jan Olav Jensen, for one, says that he and his partner's early projects on the Sognefjellet and Gamle Strynefjellsveg routes influenced their aesthetic direction later on. "It was a definite departure from the idea of the Cartesian object that lands in a place—that it's only the architect who can make decisions," he says of using topography and other in-situ characteristics to generate a built form. He and Skodvin are still pursuing this nature-based approach. Their Mortensrud Church is unrelated to the tourist roads program, for example, but it includes a stone wall whose gaps let in a patchwork of sunlight; the high tolerances for laying the stone was born from an attentive respect to locality acquired working on their tourist-roads projects. "You can recognize nature as having value and influencing geometry, and you can get something that will never happen anywhere else," Jensen says.

These dialogues with the landscape are not without critics. Ingerid Helsing Almaas, editor of Norway's professional architecture magazine *Byggekunst*, says some of her readers complain that participating architects have not been modest enough. The most bitter criticism is directed at Stegastein, which detractors claim is more a spectacle than a vehicle for understanding the landscape.

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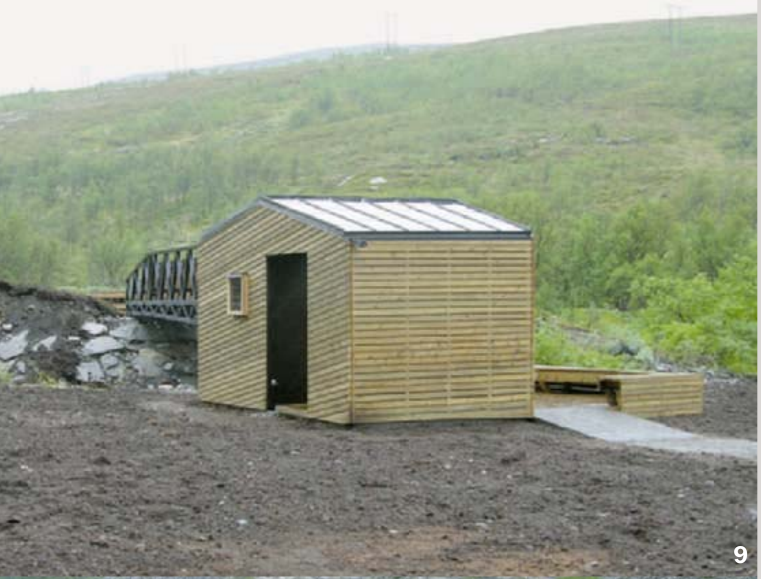
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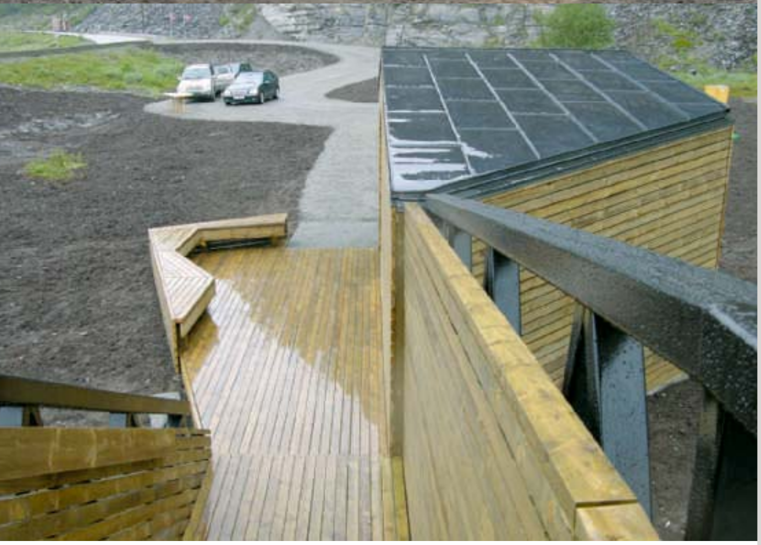
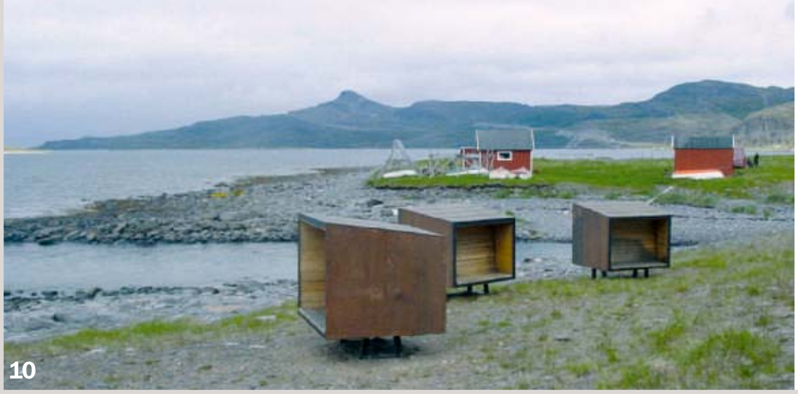


9. At Lillefjord, a site along the Havøysund route, the young architects of Pushak wedded seating and storage to a sculptural bridge. **10.** For Havøysund's Snefjord, Pushak worked with a local fabricator to devise boxes that provide travelers with a place to sit that offers shelter from the wind or opens to fjord scenery. **11.** The Lofoten route also includes Gimsøystraumen, designed by the Oslo-based firm Jarmund/Vigsnæs to combine a rest area with a local community center.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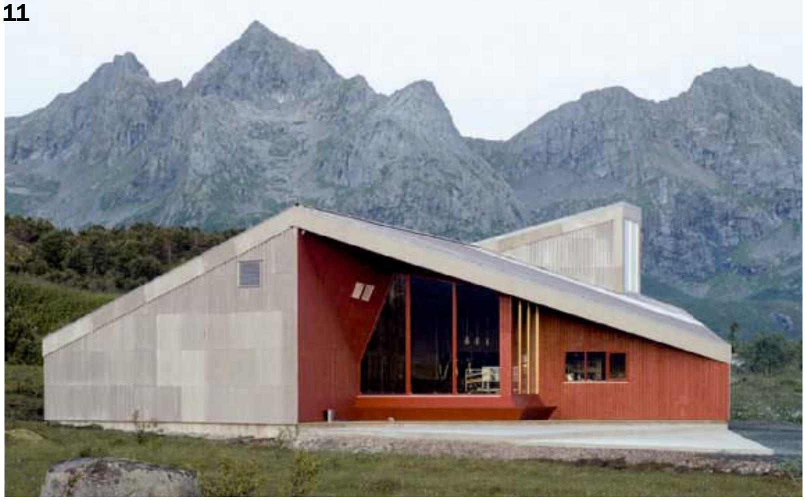

PHOTOGRAPHY: © HARALD BECH-HANSSEN (9); HJALMAR O. STEINNES (10); EINAR JARMUND (11)

Participants in the Tourist Routes project also admit there are a few kinks still to be worked out. The advisory boards only recently began promoting sustainability as a criterion for design excellence. And Andresen notes that the roads administration will need to implement a maintenance plan that lasts well beyond 2015: The glass at Flydalsjuvet has already broken under the stress of the old logs, for example, and information signs along Sognefjellet have been vandalized. The administration also will need to create a post-2015 architecture watchdog group, since municipalities could lose their tourist-road status if they build adjacent projects that don't abide by current standards.

Earlier complaints, such as the one bemoaning local communities' lack of involvement, are already being resolved. Einar Jarmund, a principal of the Oslo-based Jarmund/Vigsnæs, points to Gimsøystraumen, a rest area that his firm designed for the Lofoten route. Although the building displays its share of architectural flourish—its roofline reflects the ridge of nearby mountains—its program was expanded to include a local youth center after the existing facility was destroyed by fire. Similar community-oriented buildings are planned for other tourist roads.

The Tourist Routes project is also reinforcing its strengths, challenging architects to create unique, site-specific designs. In May, the roads administration announced that 15 young firms had earned prequalification status for future competitions and commissions. In preparation for the next phase of construction, the advisory board is culling projects that fail to make the grade, and is pushing the new firms as well as current collaborators to seek innovation regardless of their age.

One such designer is Reiulf Ramstad, who has run his eponymous firm since 1995. Back in Oslo, he shows me the multiple iterations of Trollstigplatået: the series of parking areas, viewing platforms, and walkways currently under construction at a waterfall on the Geiranger-Trollstigen route. He has worked hard to ensure a delicate look for a project that must withstand the most extreme winter conditions. In general, he points out, the tourist projects are difficult precisely because there are so few architectural restrictions. "It's easier to work in the narrow space of a city," he says, referring to the cues provided by a historic urban fabric.

Over time, though, the main attractions within the National Tourist Routes Project could become miniature cities in their own right. Neighboring cafeterias and campgrounds are already experiencing a boom in business, while Jarmund/Vigsnæs, Pushak, and other architects report that they are accumulating commissions for other public and commercial works nearby. These developments promise that architects' work on the roads is only just beginning, and will surely tempt tourists like me to make a return visit tracing the switchbacks along fjord and stream. ■

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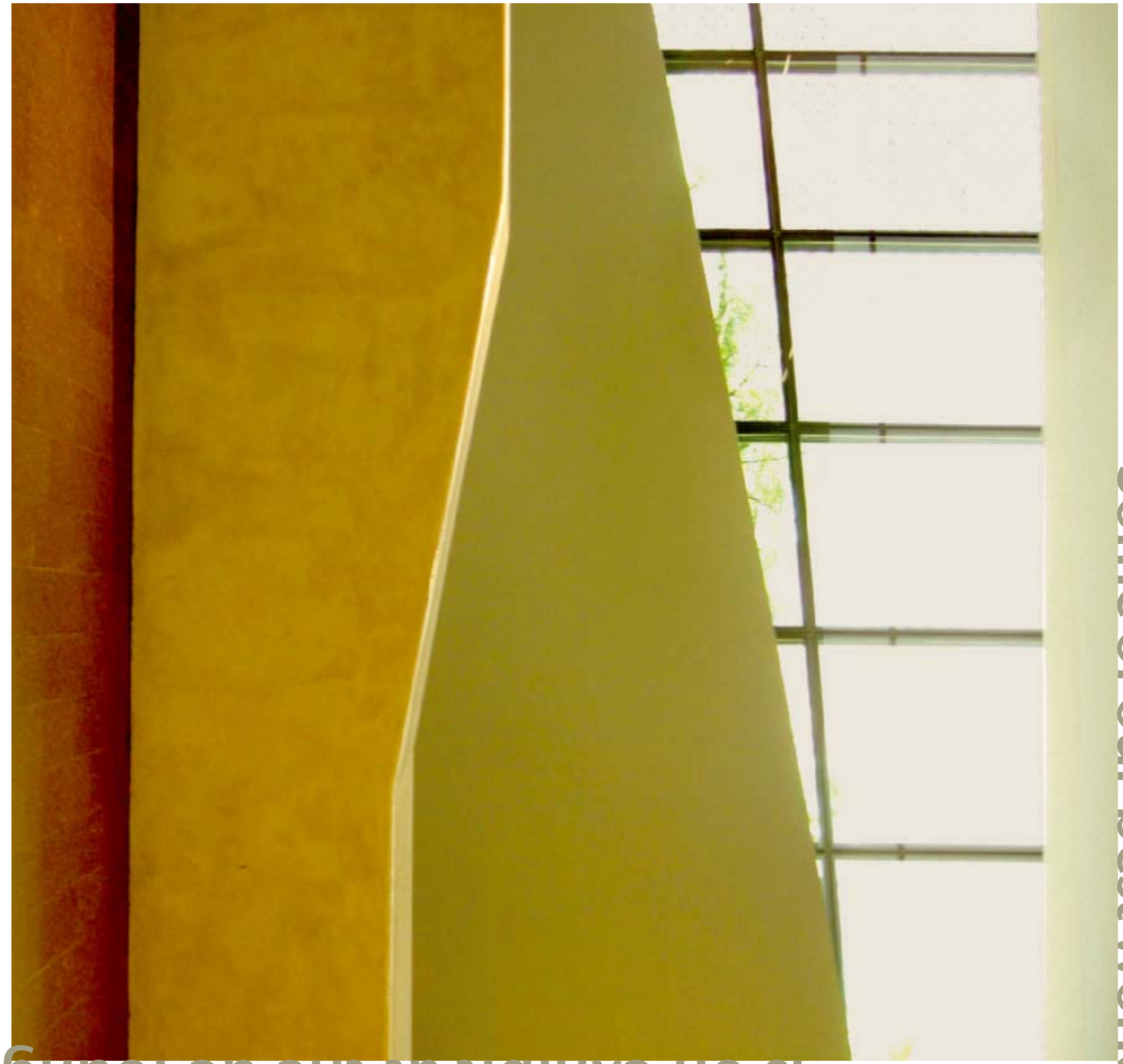

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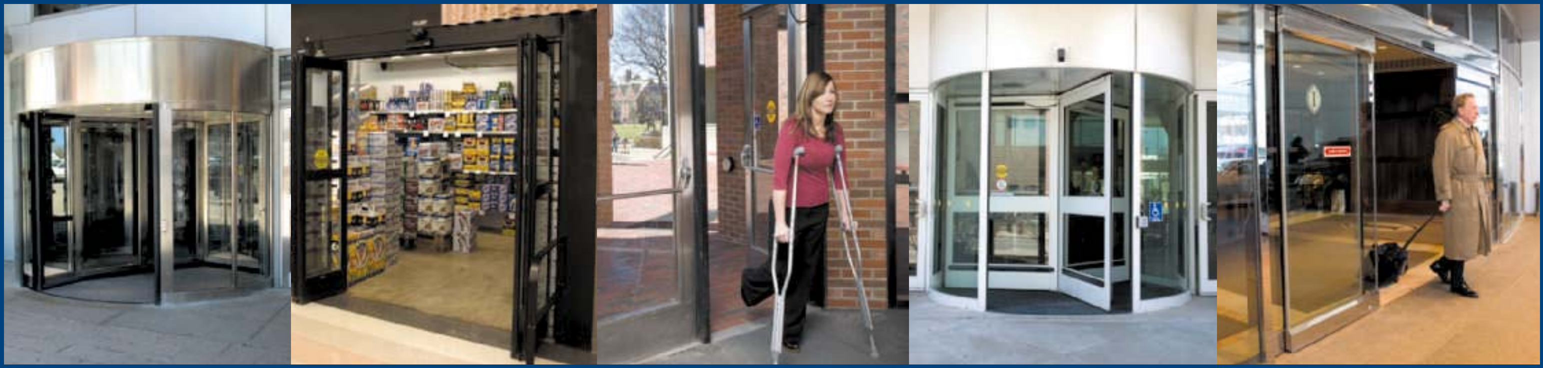

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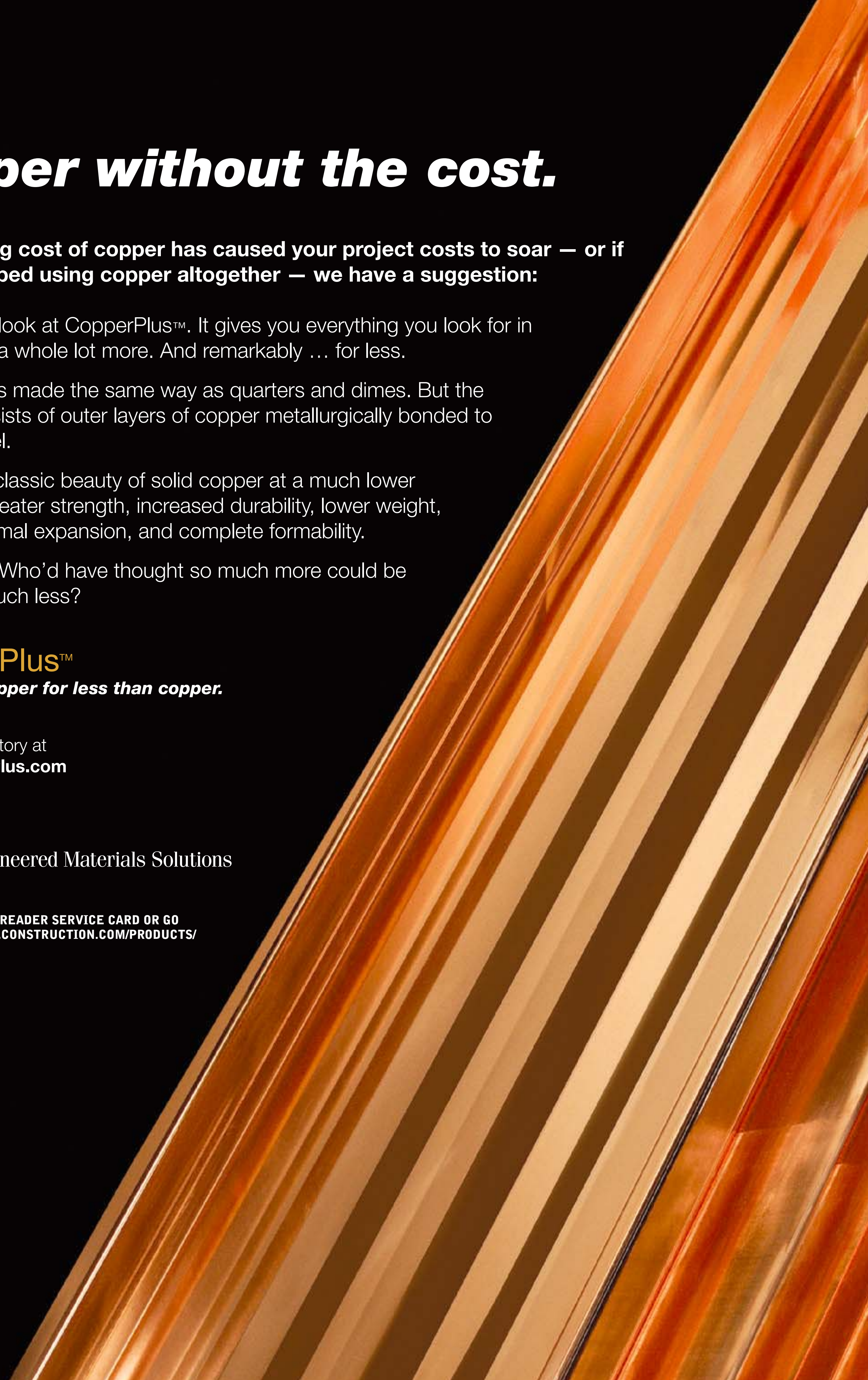
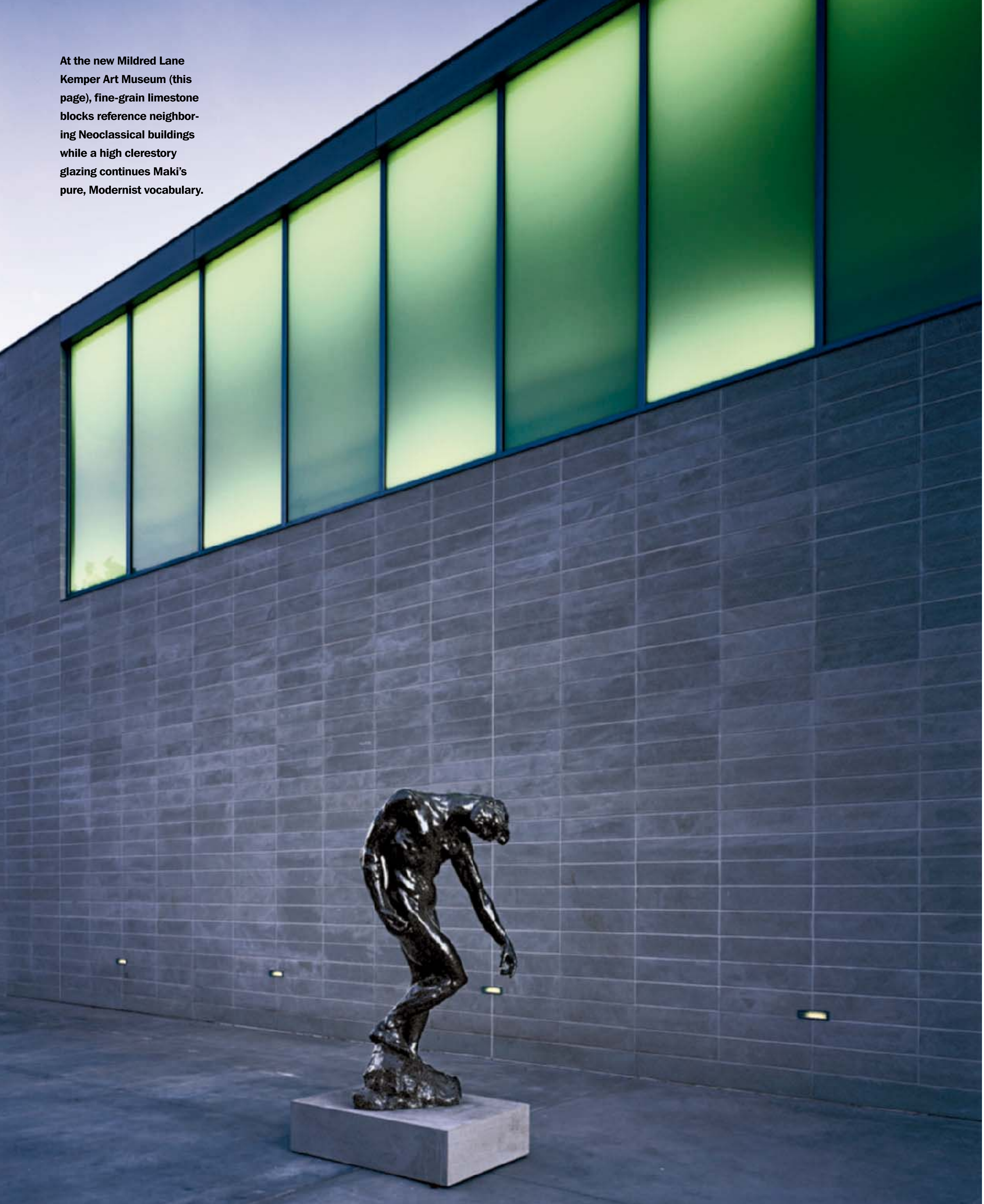
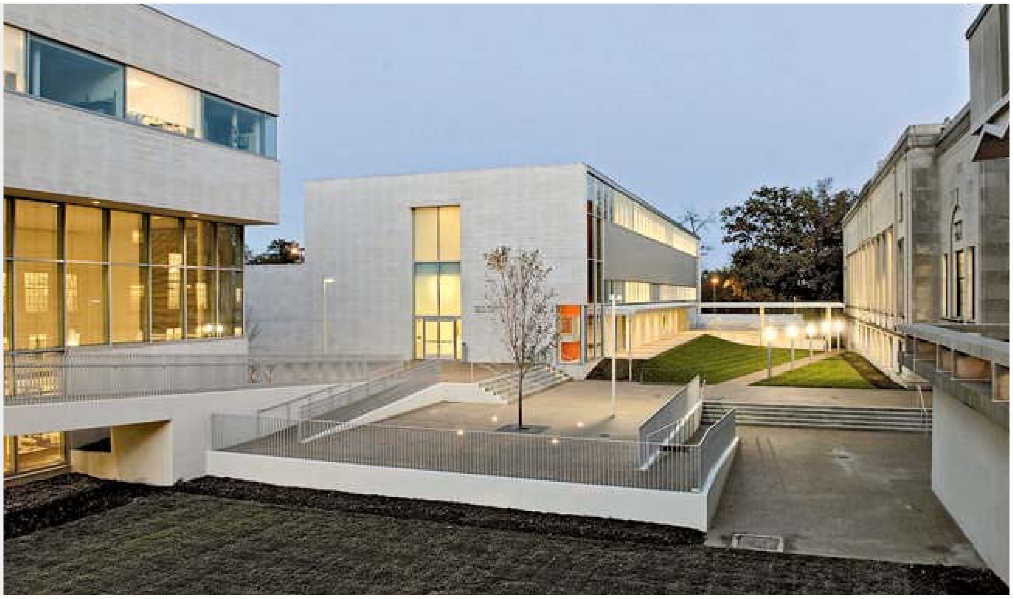


At the new Mildred Lane Kemper Art Museum (this page), fine-grain limestone blocks reference neighboring Neoclassical buildings while a high clerestory glazing continues Maki's pure, Modernist vocabulary.



Fumihiko **Maki** returns to Washington University in St. Louis, where his career began, to create the **SAM FOX ARTS CENTER**



Two new buildings (left) across from existing ones form a small quadrangle on the southeastern edge of the Washington University campus.

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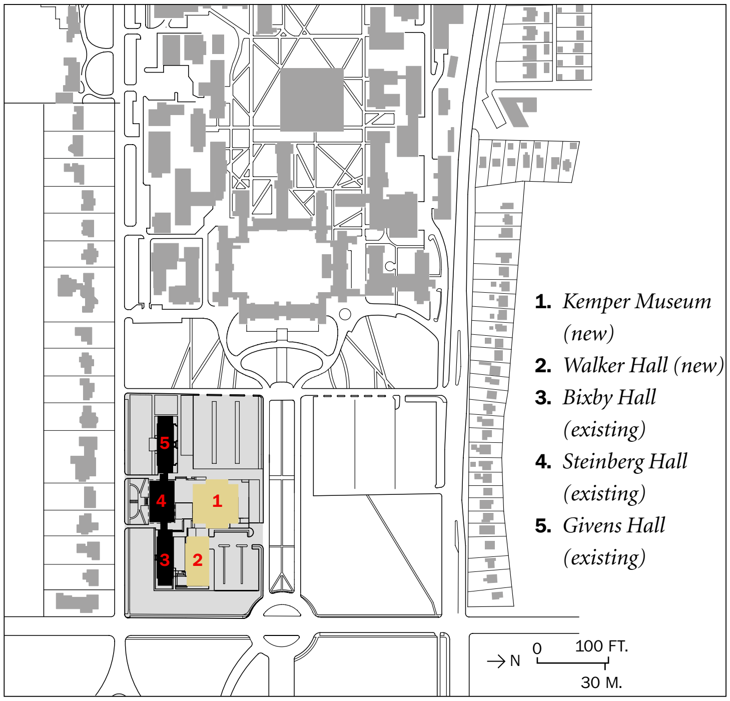
By Robert Ivy, FAIA

Rarely does an architect get the chance to add significantly to, much less transform, work done decades before. For the Japanese architect Fumihiko Maki, the potential for a new arts center at Washington University in St. Louis brought him back to the campus where he had taught and designed his first project, more than 40 years ago. The Sam Fox Arts Center, situated at the southeastern border of the 13,500-student campus, tested Maki's powers of urban and collegiate planning over the nine-year period of its gestation. Opened in 2006, the center's two primary buildings bring modernity to the red-granite Collegiate Gothic campus while knitting together formerly disparate disciplines and three existing structures into a unified place.

The story begins with Steinberg Hall. Called as a teacher to the campus from Harvard University by former dean Buford Pickens in 1958, young Maki, identified with the Japanese Metabolist movement, received a commission to design a new structure adjacent to the existing architecture building to house the art history and archaeology departments, an art gallery, an art and architecture library, and an auditorium. Considered one of his two "first" jobs (the other, Toyoda Memorial Hall for Nagoya University in Japan), the strongly articulated Steinberg opened in 1960 to favorable reviews in *Architectural Forum* and wide attention.

Fast forward to 1997, when a committee under the tutelage of then-dean Cynthia Weese, FAIA, selected former faculty member Maki to conduct a study for a "visual arts center." With strong support from the uni-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1. *Kemper Museum (new)*
2. *Walker Hall (new)*
3. *Bixby Hall (existing)*
4. *Steinberg Hall (existing)*
5. *Givens Hall (existing)*
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Project: *Sam Fox School of Design and Visual Arts, St. Louis, Missouri*
Architect: *Maki and Associates—Fumihiko Maki, principal; Gary Kamemoto, director; Jun Takahashi, Kota Kawasaki, Hiromi Kouda, Ryuji Takaichi, project team*
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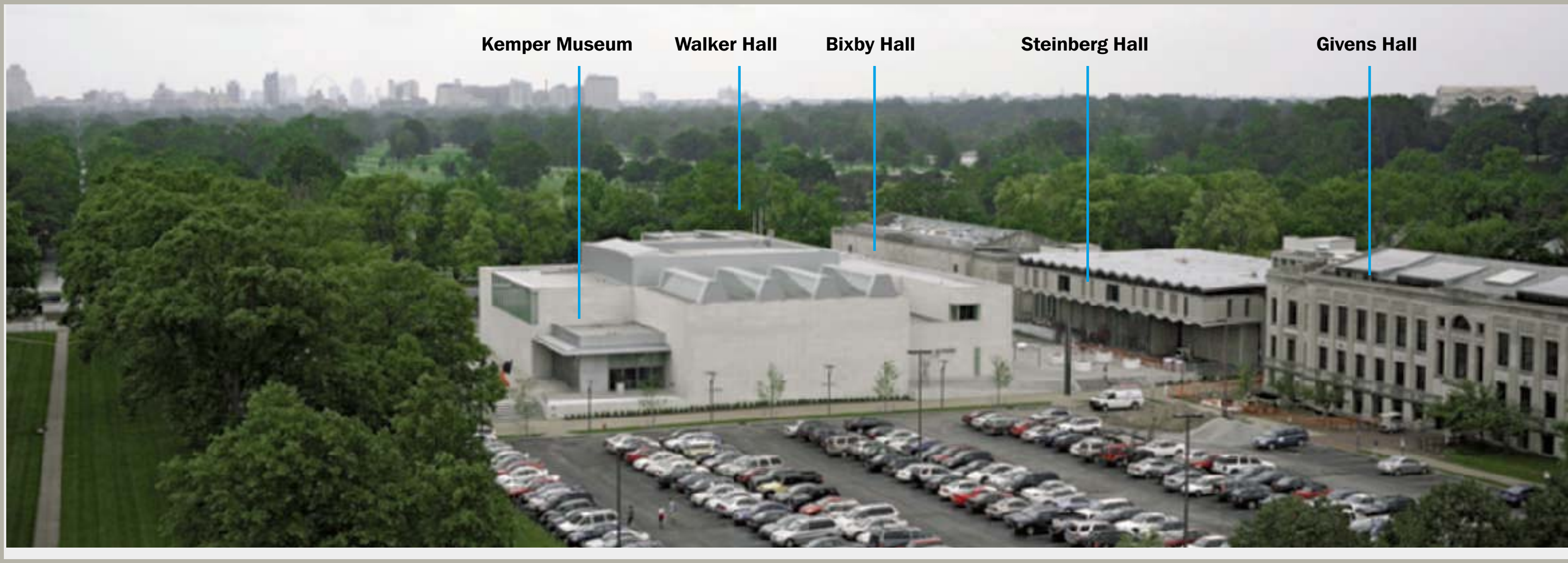

A view of the courtyard where students and faculty now congregate (above middle). The primary entrance to the Kemper Museum (above).

versity's chancellor, Maki faced an ambitious program that included a long list of needs, all to be accommodated in a single structure: new gallery space with substantial supporting facilities; space for sculpture, ceramics, and graphics; increased library facilities; and room for art history and archaeology, among other requirements. "We knew he would be able to successfully deal with extremely complex programmatic elements and campus design issues," Weese said. "And we all felt that his clear and very serene Modernist vocabulary would be compatible with the existing buildings."

After calculations proved the large enterprise to be too costly, the project restarted in 2001 with a modified budget. Maki realized that the spatial requirements for a gallery, which included high floor-to-floor demands, required one kind of building; studio arts, another. Consequently, he broke the project into two buildings, for height requirements and for the budget, he states. Programmatically, the new design would consist of a 65,000-square-foot museum, library, and classroom building and a 38,000-square-foot hands-on art school, all tied to existing structures. The total design then became an "urban design exercise—what the east campus could be," according to the architect.

The decision to divide structures programmatically had beneficial site implications. In studying the morphology of the earlier campus plan, accomplished in 1899 by the firm of Cope and Stewardson, Maki acknowledged the prevalence of a series of clustered courtyards at the original hilltop campus, created by an interlocking series of 70-foot-wide buildings. He determined to bring the pattern, what he refers to as the "fabric," forward to the east campus, while achieving greater accessibility for faculty, students, and visitors, creating a strong axis for the university and visibility for passersby on the street adjacent to Forest Park.

Limestone, which faced the existing older campus buildings on the east campus, helps unify the newer structures with the older. The contemporary architects found a lack of consistency in the older stone, and settled on a solution limited to what a single workman could lift. The modular unit they designed (8 inches high by 30 inches long by 3 inches thick) creates a horizontal texture that works "like a knitted fabric," says Maki, with unit sizes larger than tile and smaller than full-size concrete panels.

Key to his larger plan, a mall at the core of the new complex uni-

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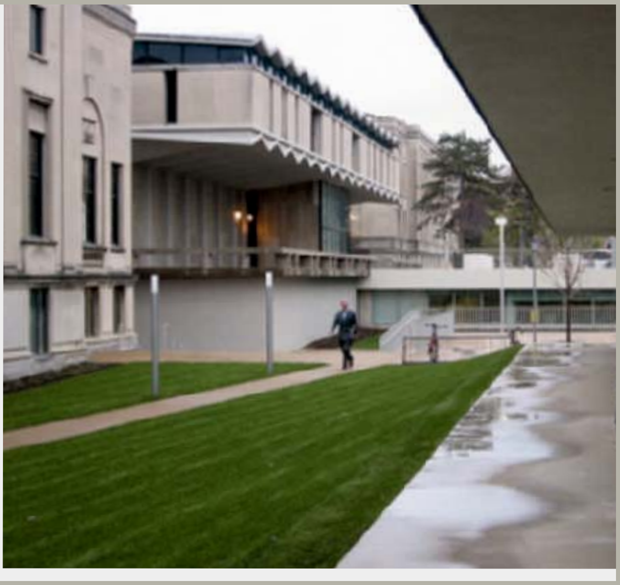
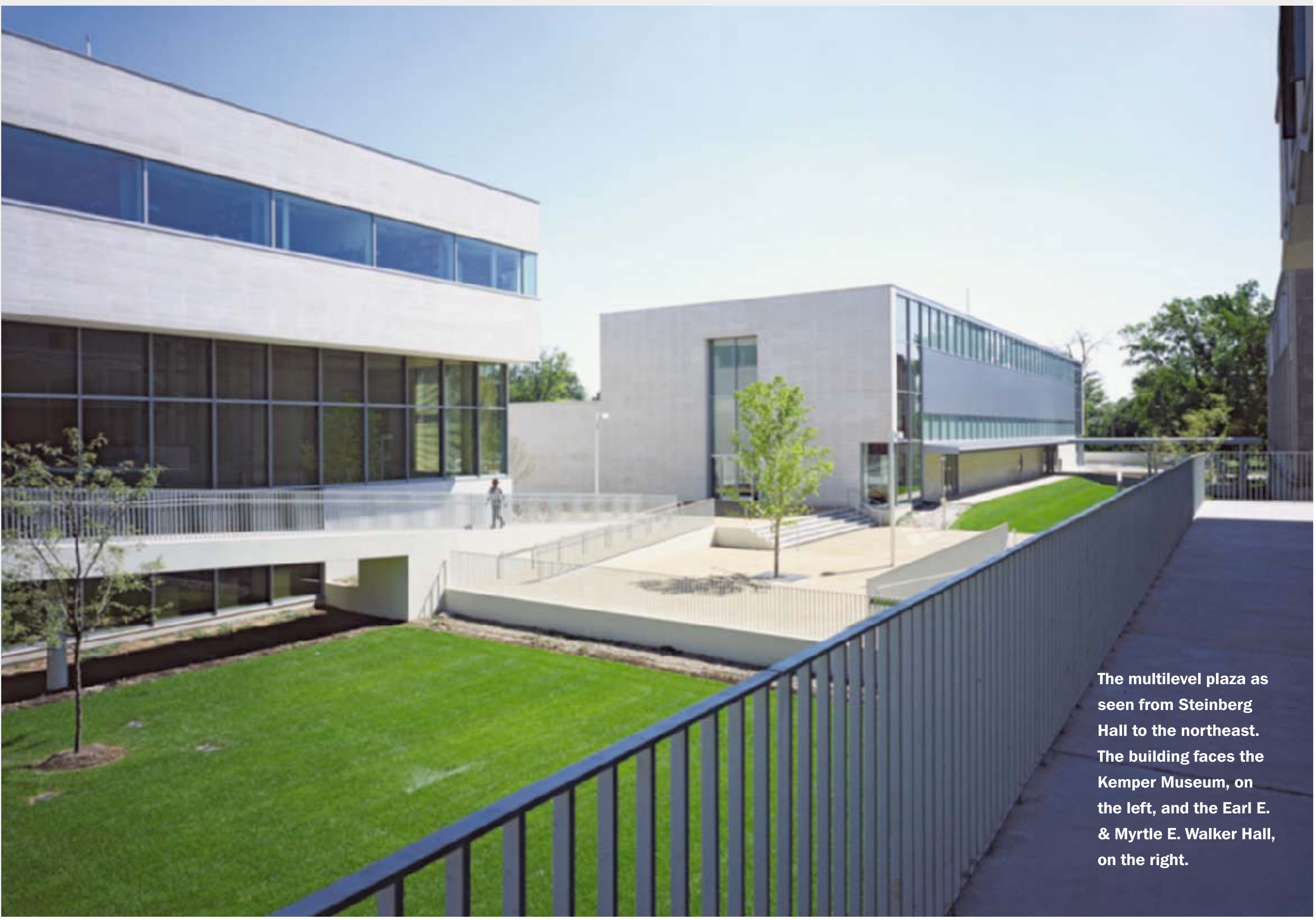


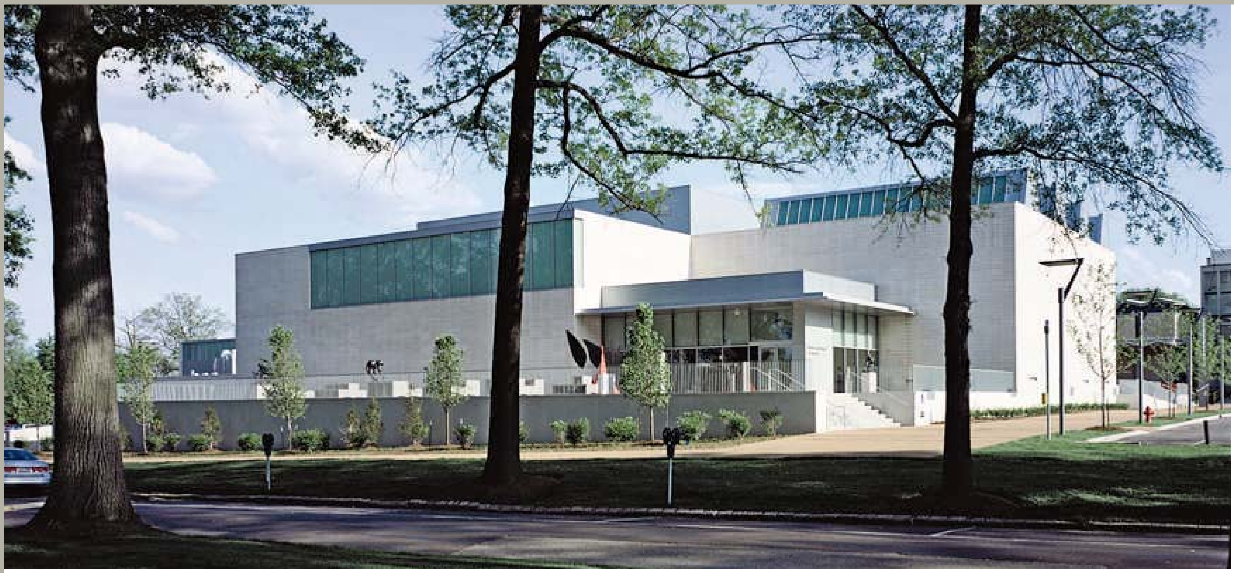
An overview of the arts complex, looking south toward Forest Park and, in the distance, St. Louis and its iconic arch (opposite, top). The renovated Steinberg Hall, designed by Maki and completed in 1960, is connected to the new buildings through a subterranean passage (left).

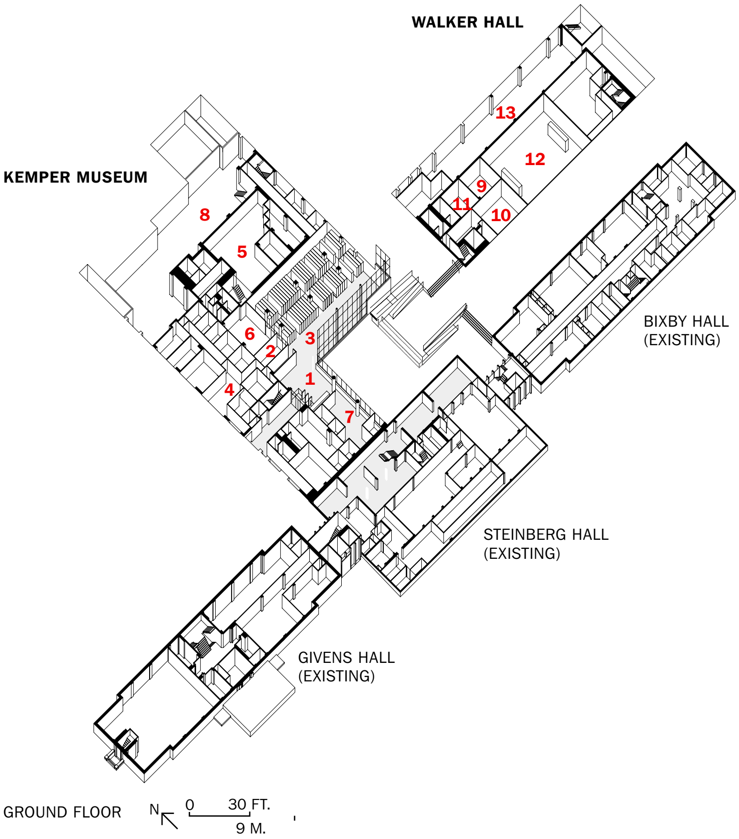
THE TOTAL DESIGN THEN BECAME "AN URBAN DESIGN EXERCISE—WHAT THE EAST CAMPUS COULD BE," ACCORDING TO MAKI.



The multilevel plaza as seen from Steinberg Hall to the northeast. The building faces the Kemper Museum, on the left, and the Earl E. & Myrtle E. Walker Hall, on the right.

The museum's northwest entrance (right) is flanked by a sculpture court. A ribbon of windows on a 32-foot-tall, limestone-clad wall ushers light into an interior gallery (left in photo). The building's lean, simple forms create a new doorway to the historic campus (opposite).




WALKER HALL
KEMPER MUSEUM
BIXBY HALL (EXISTING)
STEINBERG HALL (EXISTING)
GIVENS HALL (EXISTING)
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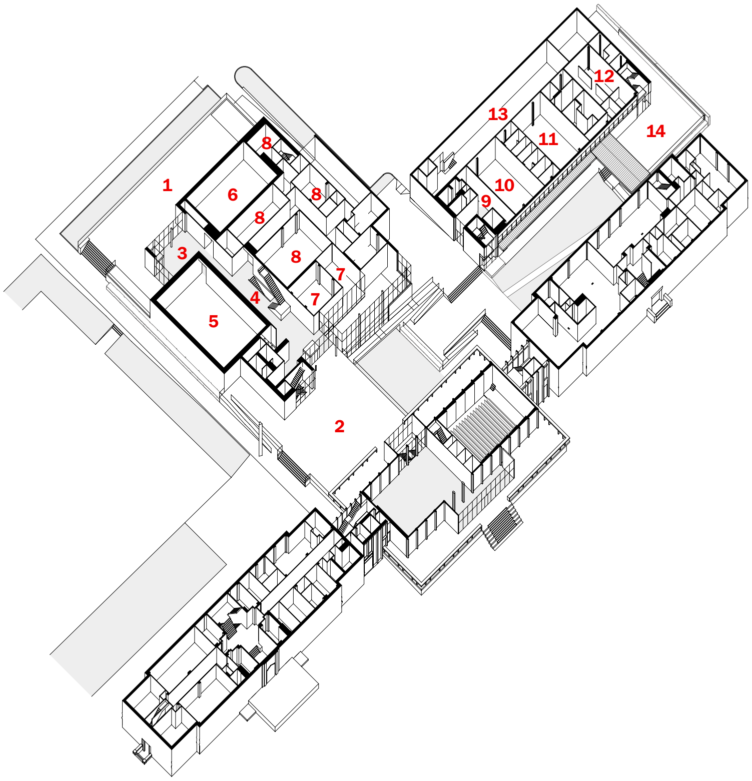
GROUND FLOOR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FIRST FLOOR

KEMPER MUSEUM

1. *Library*
2. *Seminar room*
3. *Reading room*
4. *Learning lab*
5. *Money museum*
6. *Research room*
7. *Work area*
8. *Mechanical room*

WALKER HALL

9. *Office*
10. *Conference room*
11. *Performance/ installation studio*
12. *Undergraduate sculpture studio*
13. *Mechanical room*

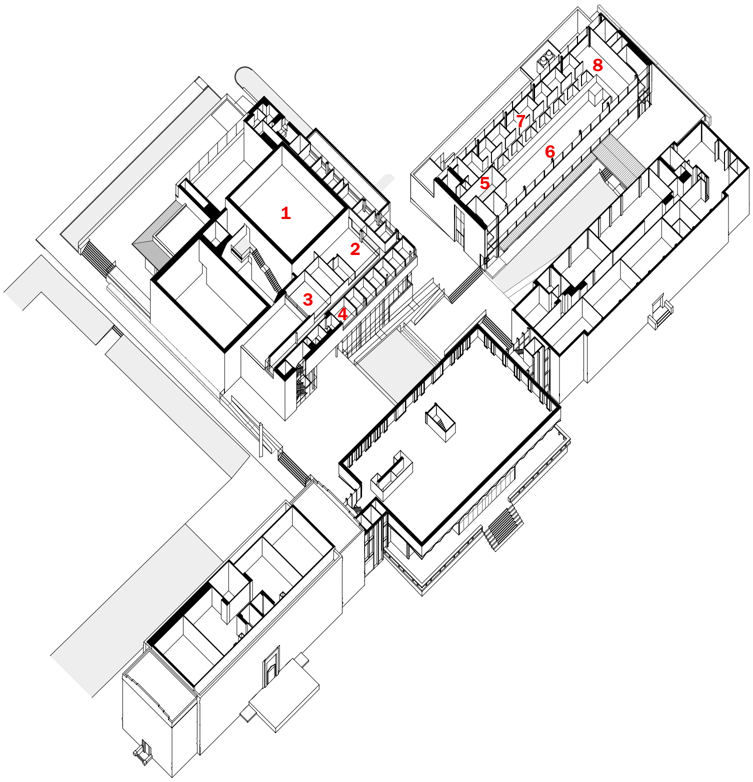
KEMPER MUSEUM

1. *Sculpture plaza*
2. *Central plaza*
3. *Foyer*
4. *Atrium*
5. *Temporary display*
6. *College of Art gallery*
7. *Classroom*
8. *Storage*

WALKER HALL

9. *Foyer*
10. *Metal sculpture studio*
11. *Wood sculpture studio*
12. *Graduate sculpture studio*
13. *Working court*
14. *Terrace*

ASSOCIATE DEAN PETER MACKEITH DESCRIBES THE PROJECT AS "ELECTED ECONOMY—A RESTRAINT IN ARCHITECTURAL EXPRESSION."



SECOND FLOOR

KEMPER MUSEUM

1. *Permanent collection gallery*
2. *Office, museum director*
3. *Offices, art history and archaeology departments*
4. *Offices*

WALKER HALL

5. *Foyer*
6. *Illustrated-book studio*
7. *Undergraduate painting studios*
8. *Student art review room*

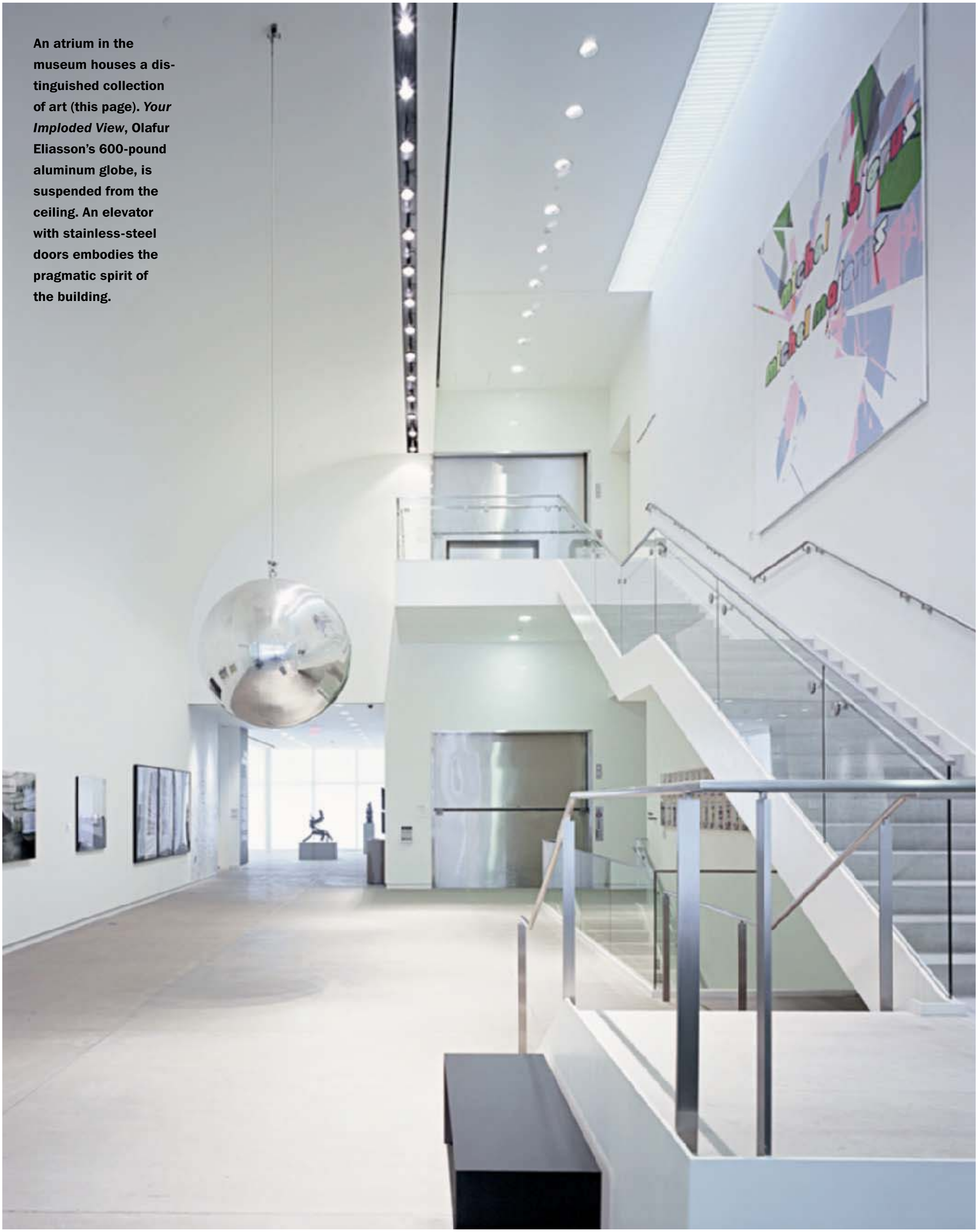
fies the total complex of five major buildings and creates an inner courtyard that, on a smaller scale, recalls spaces alongside Florence, Italy's supreme Uffizi Gallery. Complex and multipartite, simultaneously serving as a transitory space, a gathering place, and a sunken corridor between the new arts center and the aforementioned Steinberg Hall, the courtyard embodies the Japanese term *oku*. In his book of essays entitled, *Selected Passages on the City and on Architecture* (2000), Maki describes *oku* as, "the innermost area … lying at the core of this multilayered, dense spatial composition (similar to the layers of an onion)."

The result allows "multiple points of access," says Peter MacKeith, associate dean of the Sam Fox School of Design and Visual Arts. As constructed, the layered spaces allow the visitor to pass through visually, to pass under or through the buildings, to ramp over them, and to observe the composition from other places outside and within the buildings themselves.

Facing the mall, transparency at the entry characterizes the Kemper Museum, which serves as a cross-axis to the mall's linear spine. Immediately on entry, the light-filled, two-story atrium mounts upward to a second level by simple stairs, but more importantly by an elevator that embodies the pragmatic spirit of the entire building—a stainless-steel, oversize elevator for transporting artwork and people. Gary Kamemoto, Maki's partner in charge of the project, insists, "A working museum for university students needed a 10-foot elevator."

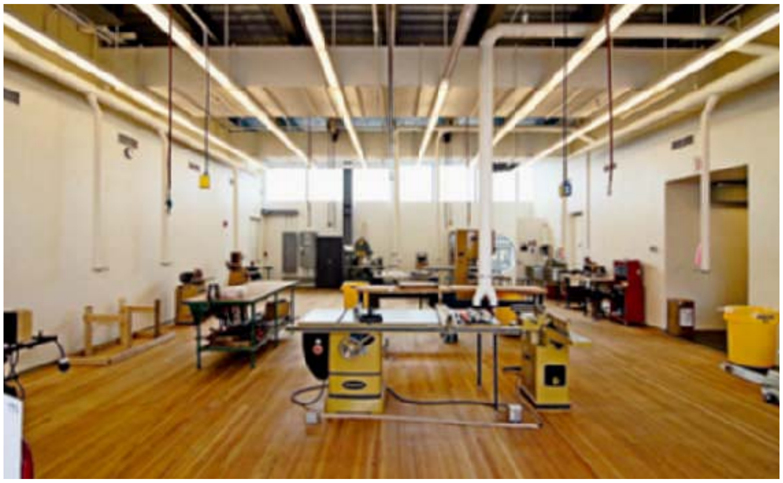
In the Kemper, movement systems and passageways link five different ambiences for encountering art, each with a distinct purpose. On the first floor, two galleries, one for art students and one for traveling exhibitions, "like a kunsthalle," says Maki, rise 25 feet in height. The university's superb permanent collection resides in more generous spaces on the second level. All are open to the public.

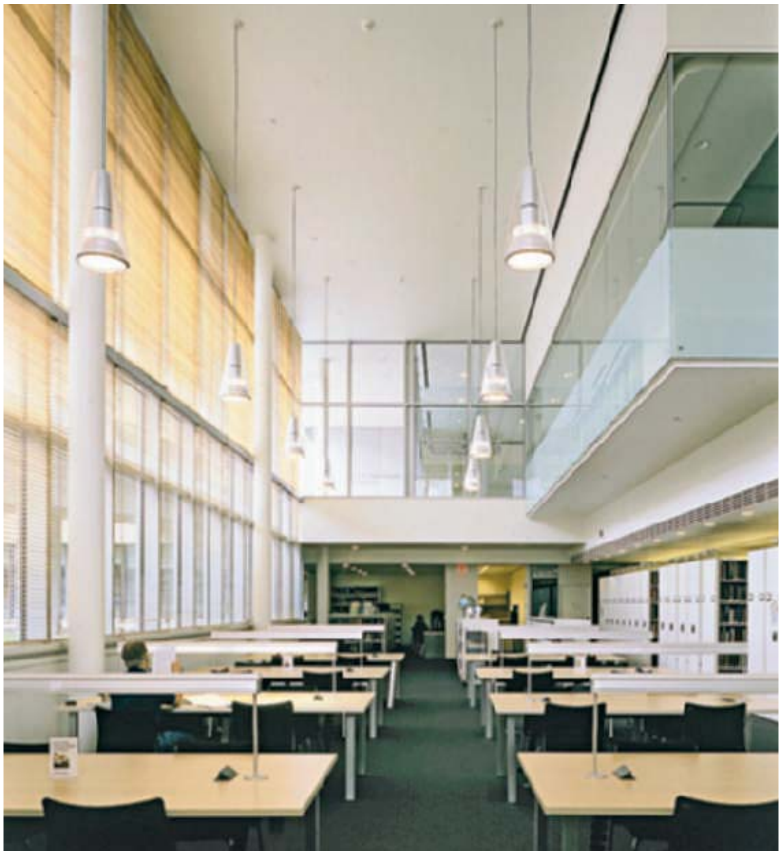
In studying the options for Walker Hall, team members visited other sites in which raw industrial space had been converted into working studios for sculpture, painting, and book design. They found that while many created dynamic working and teaching environments, they lacked essential services, such as adequate heating, ventilation, and air-conditioning, required in a teaching environment. Natural light proved critical. The new studio arts building balances the costs of the total proj-



An atrium in the museum houses a distinguished collection of art (this page). *Your Imploded View*, Olafur Eliasson's 600-pound aluminum globe, is suspended from the ceiling. An elevator with stainless-steel doors embodies the pragmatic spirit of the building.

PHOTOGRAPHY: © SHINKENCHIKU (OPPOSITE, BOTTOM LEFT); COURTESY MAKI & ASSOCIATES (OPPOSITE, TOP THREE)





Light plays a prominent role in Maki's interiors, as shown in the College of Art gallery (left). The HVAC system serves as a design element in the woodworking studio (below left). A spare sensibility characterizes the two-story library (bottom left) that opens onto the courtyard. The foyer (below) in the northwest corner of the 65,000-square-foot Kemper Museum overlooks an exterior sculpture court.

ect between the more finished adjacent galleries and the straightforward studios with simplicity, clearly organizing the location of structure, ducts, sprinkler piping, and lighting.

Analysis

Simplicity should not be confused with lack of subtlety, however. The Sam Fox Arts Center, while marked with Maki's characteristic restraint, achieves a pared-down dignity in the smallest details. If the galleries lack the formal exuberance of certain contemporary museums, they also embody and honor their purpose, that of a university museum, in a way that bespeaks confident self-knowledge. MacKeith has called it "an elected economy—a restraint in architectural expression" that could only come from an architect who knows himself and his subject at a bedrock level. While Maki's hallmark restraint may not engage the public with dramatic bravado, the flow and the ease of the interlaced composition will draw the crowds in, allowing easy interactions between art and the observer, between student and the whole campus. At the larger scale, the complex suggests how to complete the total campus through specific placemaking that allows for complementary expansion adjacent to this complex and across the university's entrance drive. At the Sam Fox Arts Center, Maki revisited Washington University 40 years later and added not only a building, but a "college of the arts." ■

Sources

Exterior window system and aluminum curtain wall: *Kawneer*

Skylights: *Supersky*

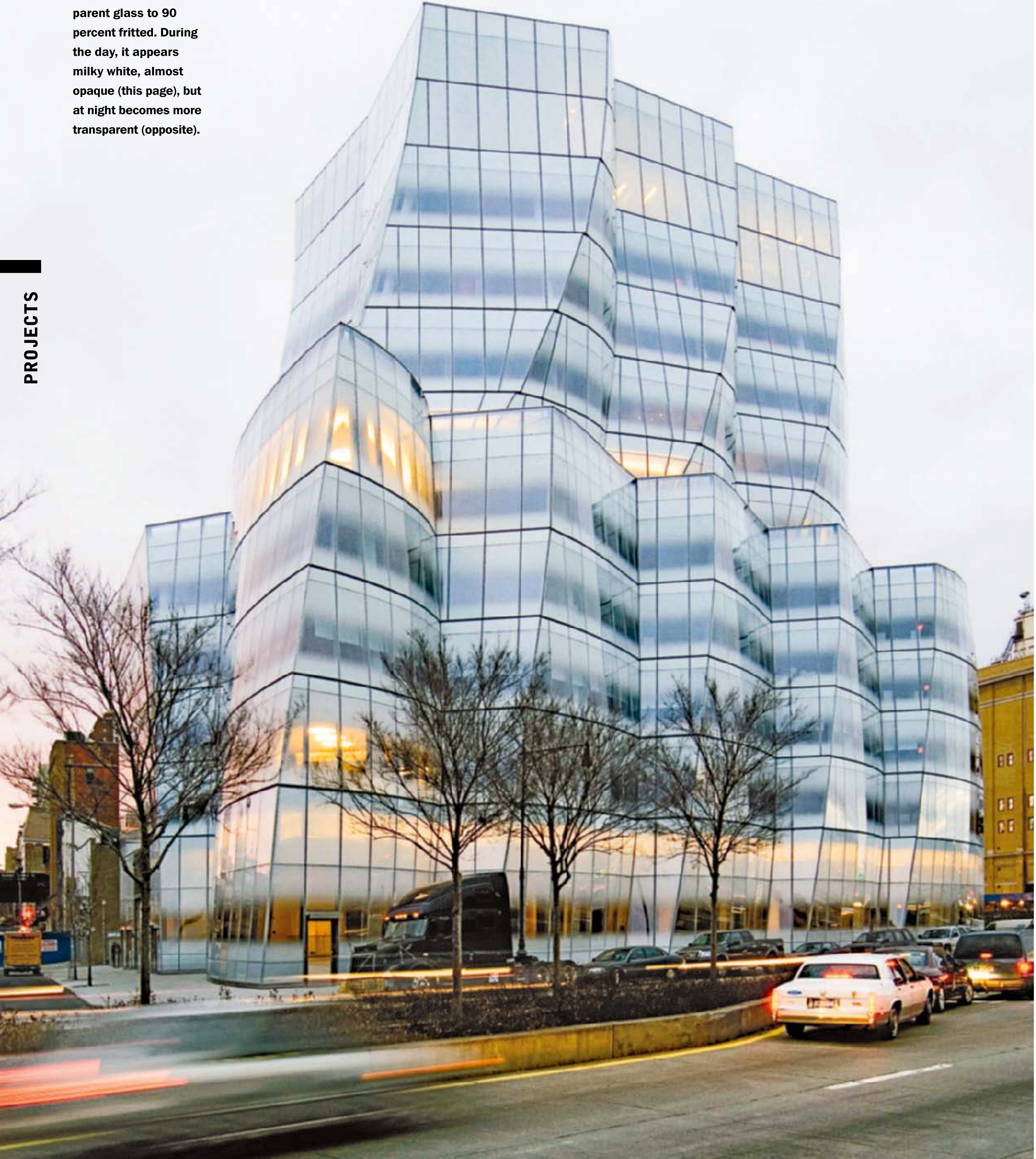
Gallery lighting: *Parscan by ERCO*

Doors: *Kawneer (entrance); Hufcor (glass sliding); Modernfold (gallery sliding); Adam Rite (fire control); Cookson (rolling overhead)*

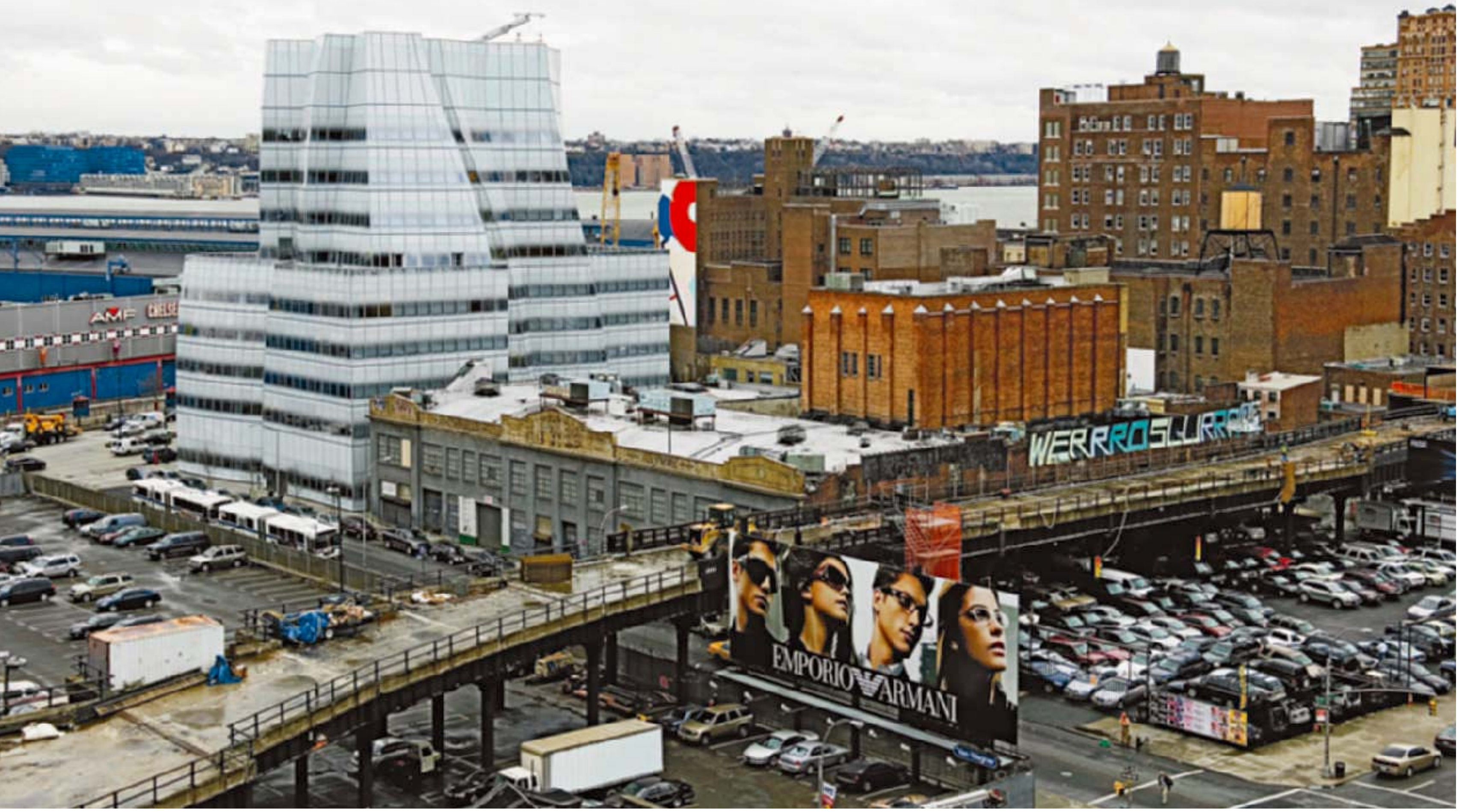
Linoleum flooring: *Marmoleum by Forbo*

ONLINE: To rate this project, go to **architecturalrecord.com/projects/**. Submit your project to **construction.com/community/gallerylist.aspx**.

The building's curtain wall ranges from transparent glass to 90 percent fritted. During the day, it appears milky white, almost opaque (this page), but at night becomes more transparent (opposite).



Frank **Gehry's** first building in New York City, the **IAC HEADQUARTERS**, pioneers a new neighborhood, eliciting positive and negative reactions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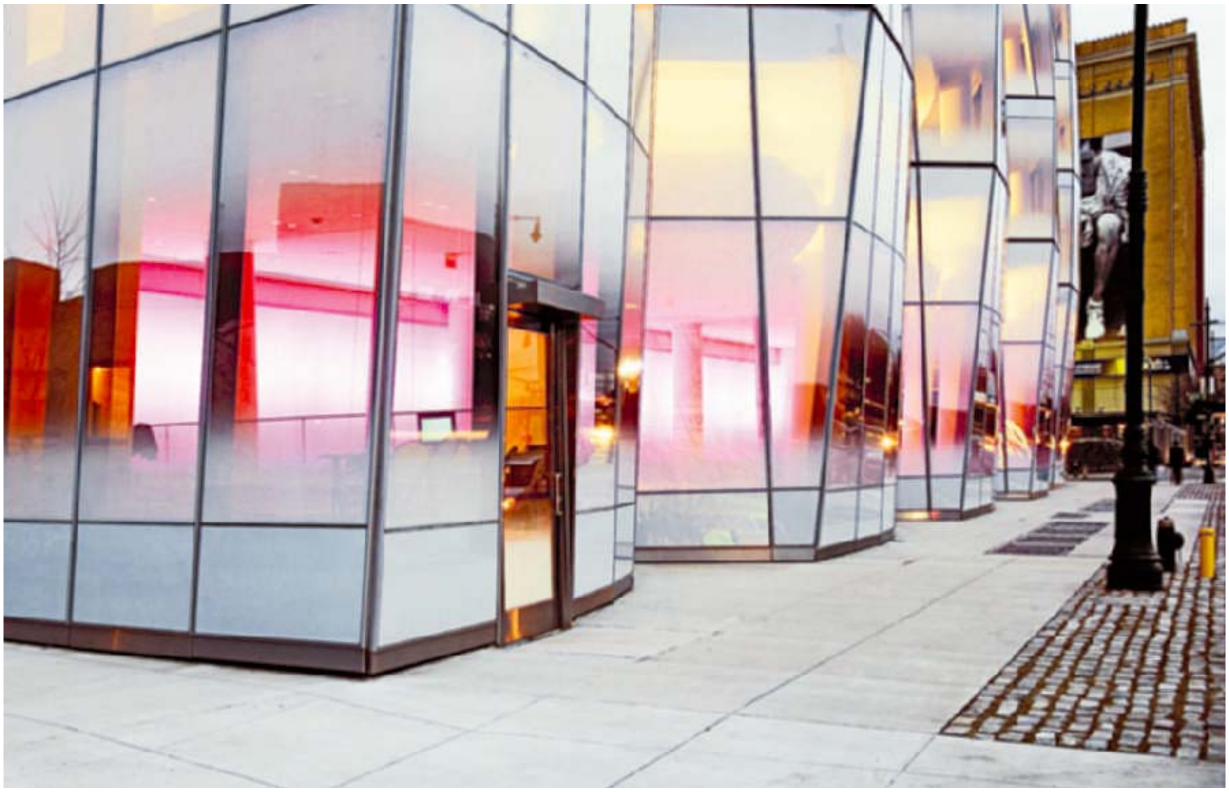


The IAC stands between the Chelsea Piers recreation center and the elevated High Line (above) in a neighborhood that will soon see a number of expensive apartment towers by big-name architects. A 120-foot-long media wall glows inside the lobby facing West Street (left).

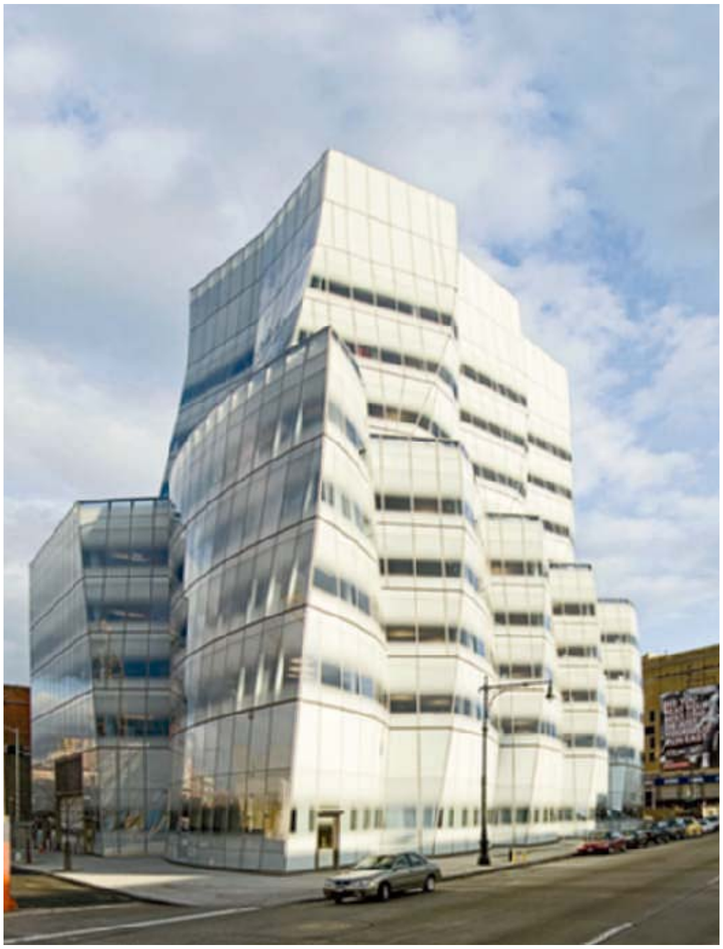
By Clifford A. Pearson

With its ethereal, milky-white skin and faceted curves, Frank Gehry's IAC Building stands out against the heavy, industrial structures surrounding it on the western fringe of Manhattan's rapidly evolving Chelsea neighborhood. Even as its context changes in the next few years with the conversion of an abandoned elevated rail (the High Line) into a 1.5-mile-long public park and the addition of apartment towers by Jean Nouvel, Shigeru Ban, Neil Denari, Winka Dubbeldam, Annabelle Seldorf, Robert A.M. Stern, and others, the IAC will remain unique in both its architectural expression and its function as a corporate office building. Its status as a Greta Garbo kind of building, however, highlights the project's weaknesses as well as its strengths.

While no one hires Gehry to design a quiet, background building, Barry Diller, the chairman and C.E.O. of IAC/InterActiveCorp, envisioned his new headquarters as a catalyst for transforming a part of town he has long championed. An early and generous supporter of the High Line, Diller—along with his wife, fashion designer Diane von Furstenberg, whose new headquarters is just a few blocks south—prides himself on being an urban pioneer. So you might expect the IAC to reach out and engage its neighbors more directly than it does. As Gehry proved with his Disney Concert Hall—where a truly public lobby and a series of outdoor gardens invite everyone to spend time—standing out doesn't have to mean standing apart.

As a piece of architectural sculpture, the building conjures a range of imagery—from the billowing sails of a boat to a beached iceberg. By wrapping the structure's listing concrete frame with a fritted-glass curtain wall that has no exterior mullions, Gehry emphasizes the purely formal aspects of the building and underscores its role as an object inserted in the landscape. But this object has no base to sit on, so you get the impression it could be lifted up and taken away as easily as it was placed here.

Facing West Street and the Hudson River, the nine-story building has no retail or restaurant space to engage the street (right) and invite pedestrians inside.



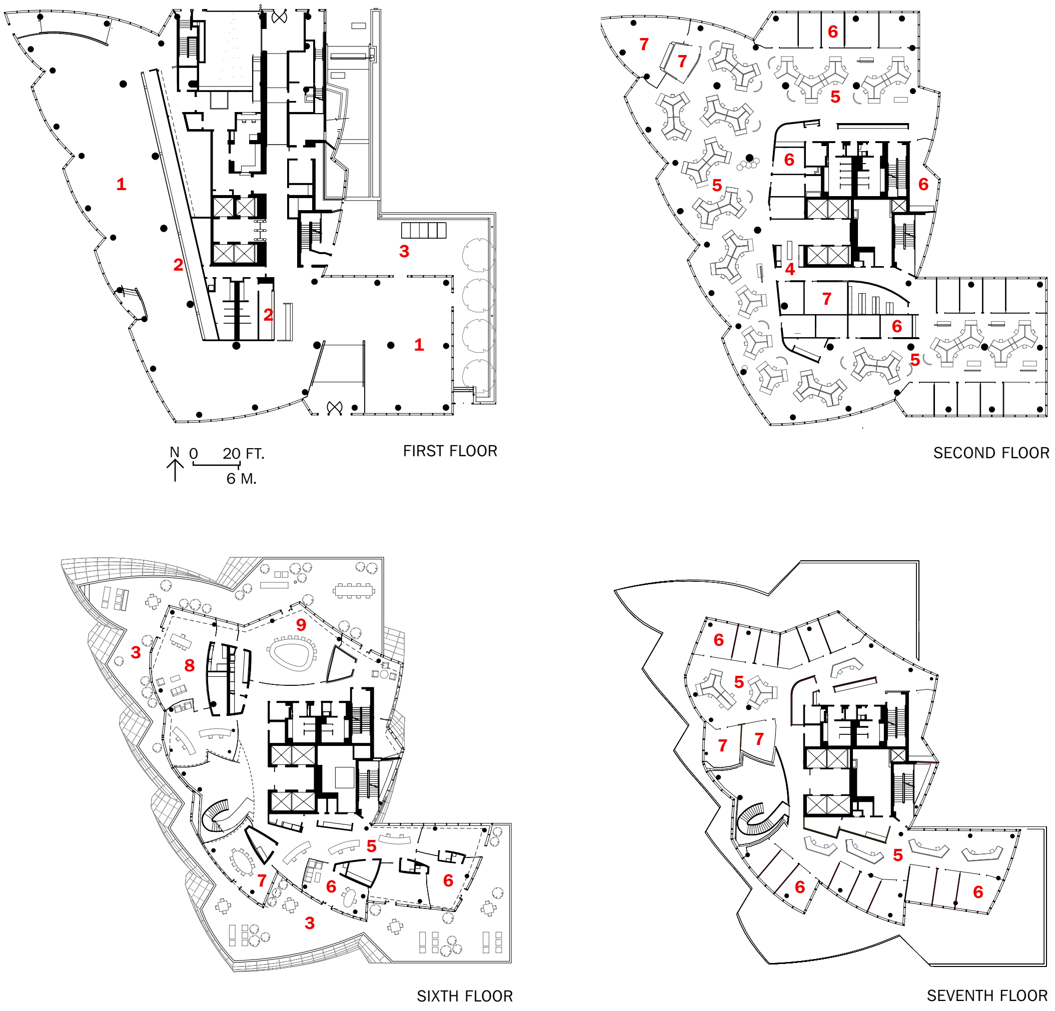
Most office buildings in New York have stores or restaurants on their ground floors that tie them to the street life of the city. But Diller decided to reserve the IAC's first floor for a sprawling lobby, which doubles as a special-events space. So his headquarters seals itself off from its neighborhood, providing only small, cheap-looking emergency-egress doors on its long West Street facade. Neither the main entrance on 18th Street nor a secondary one on 19th Street do much to engage the sidewalk, either, their flat profiles on flat portions of the building's envelope seeming more stealthy than welcoming. And the curtain wall, which ranges from transparent to 90 percent fritted, appears mostly opaque during the day, further separating what's happening inside from the rest of Chelsea.

Visitors who get inside, though, are treated to an elegant lobby enlivened by two impressive media walls—one behind the reception desk that projects information about the nearly 70 brands under the IAC corporate umbrella and the other that faces West Street and stretches 120 feet long and 11 feet high. Video projectors (18 for the long wall and three for the short one) beam images from behind the walls, and computers coordinate them, creating attention-grabbing visuals that can be either informative or just seductive. Also equipped with LEDs, the walls can switch from video projections to light shows. Though sophisticated technologically, the media walls don't sport in-your-face gadgetry. "We didn't want lots of bells and whistles," says Jason Stewart, IAC's chief administrative officer. "We wanted the technology throughout the building to be seamless with the architecture," explains Stewart. "Everyone spent a lot of time making this stuff easy to use," states Todd DeGarmo, AIA, the principal in charge of the project for STUDIOS Architecture, which designed the interiors.

Before moving into the building in April, IAC had offices in a host of buildings in midtown Manhattan. The company—which owns the Home Shopping Network, Ticketmaster, LendingTree, Match.com, Ask.com, and Evite—wanted to bring all of its businesses under one roof. The Gehry building provides 150,000 net square feet on nine floors (each a different size) and can accommodate 500 employees—most in open-plan workstations. The STUDIOS team placed most of the private offices around the building's core so the open-office areas could enjoy the views and more direct daylight. Customized workstations that combine wood-veneer and painted-metal panels rise 52 inches, high enough to provide privacy when workers are seated, but a sense of connection when they're standing. "We offered Barry a choice of wood or white metal for the workstations," recalls DeGarmo, "and he said, 'Both.' " Indeed, Diller encouraged the designers to develop multiples of almost everything in the interiors—carpeting, finishes, and colors—an approach that creates a certain amount of visual chaos but seems appropriate for the kind of employees IAC attracts (young and media-savvy, many of whom are

Project: *IAC/InterActiveCorp Building, New York City*
Architect: *Gehry Partners—Frank O. Gehry, FAIA, partner*
Interior architect: *STUDIOS Architecture—Todd DeGarmo, AIA, Tom Krizmanic, AIA, Brian Tolman, AIA, Geoff DeOld, David Burns, Sara Schuster, Joshua Rider, design team*
Engineers: *DeSimone (structural); Cosentini (m/e/p)*
Consultants: *Israel Berger (curtain wall glass); Bruce Mau (graphics)*
General contractor: *Turner*

PHOTOGRAPHY: © THOMAS MAYER



FIRST FLOOR

SECOND FLOOR

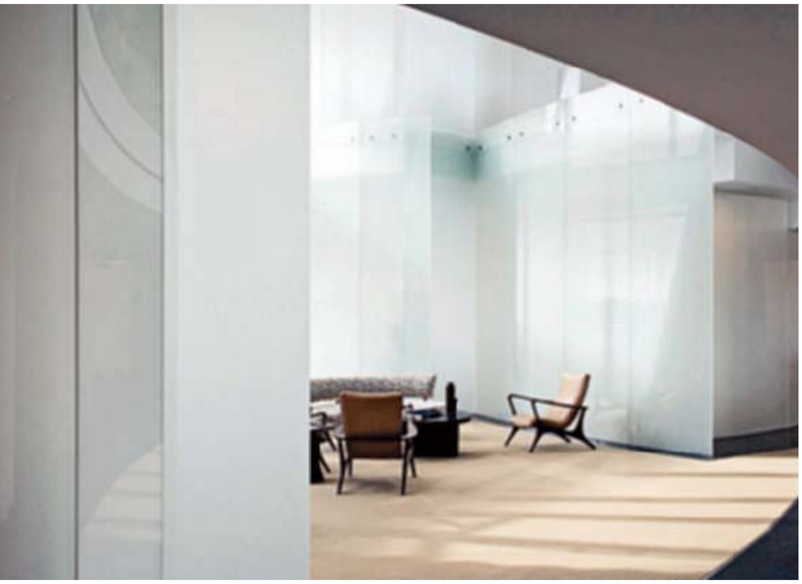
SIXTH FLOOR

SEVENTH FLOOR

1. *Lobby*
2. *Media wall*
3. *Terrace*
4. *Kitchenette*
5. *Open offices*
6. *Private office*
7. *Conference*
8. *C.E.O. suite*
9. *Boardroom*

Each floor plate in the 150,000-square-foot building is different (plans, left), creating a challenge for interior designers at STUDIOS who needed to provide space for up to 500 employees.

A double-height atrium on the sixth floor (below) provides a sitting area just outside the office of C.E.O. Barry Diller. Gehry designed the offices on this, the executive floor.



involved in new Web sites and other start-up enterprises). The architecture and interiors complement each other—defining a workplace that's energized without being wacky or contrived. The top floor, instead of being reserved for muckety-mucks, serves as the company's social hub, with a pantry and café wrapped on two sides by the best views in the building.

Top executives occupy the sixth floor, so Diller would be in "the center of things, not at the top," says Stewart. Gehry worked with STUDIOS on the interiors here (including Diller's office and a high-tech boardroom) and designed a curving, glass-and-steel stair leading to the seventh floor. Calmer and more elegant than the other interiors, the executive floor strikes different notes, some not quite in tune with the other floors.

When first announced, the Gehry-Diller match seemed to promise an architecture animated by a new-media ethos. While the IAC Building delivers an appealing sculptural presence in the urban landscape and some attractive work spaces, it doesn't connect with its neighbors in any way comparable to the interactive businesses going on inside it. ■

Sources

Curtain wall: *Permasteelisa Group*

Carpet: *Shaw (L7 collection by Bruce Mau)*

Interior glass partitions: *Depp Glass (custom colors)*

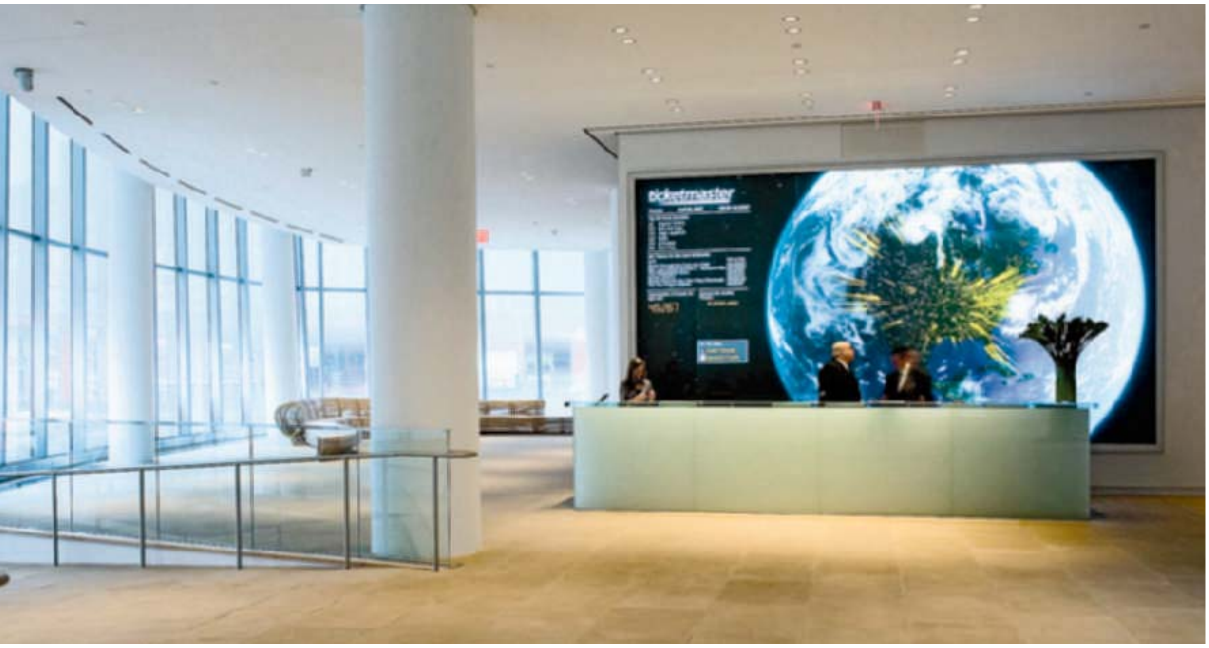
Workstations: *Unifor*

Chairs: *Aeron*

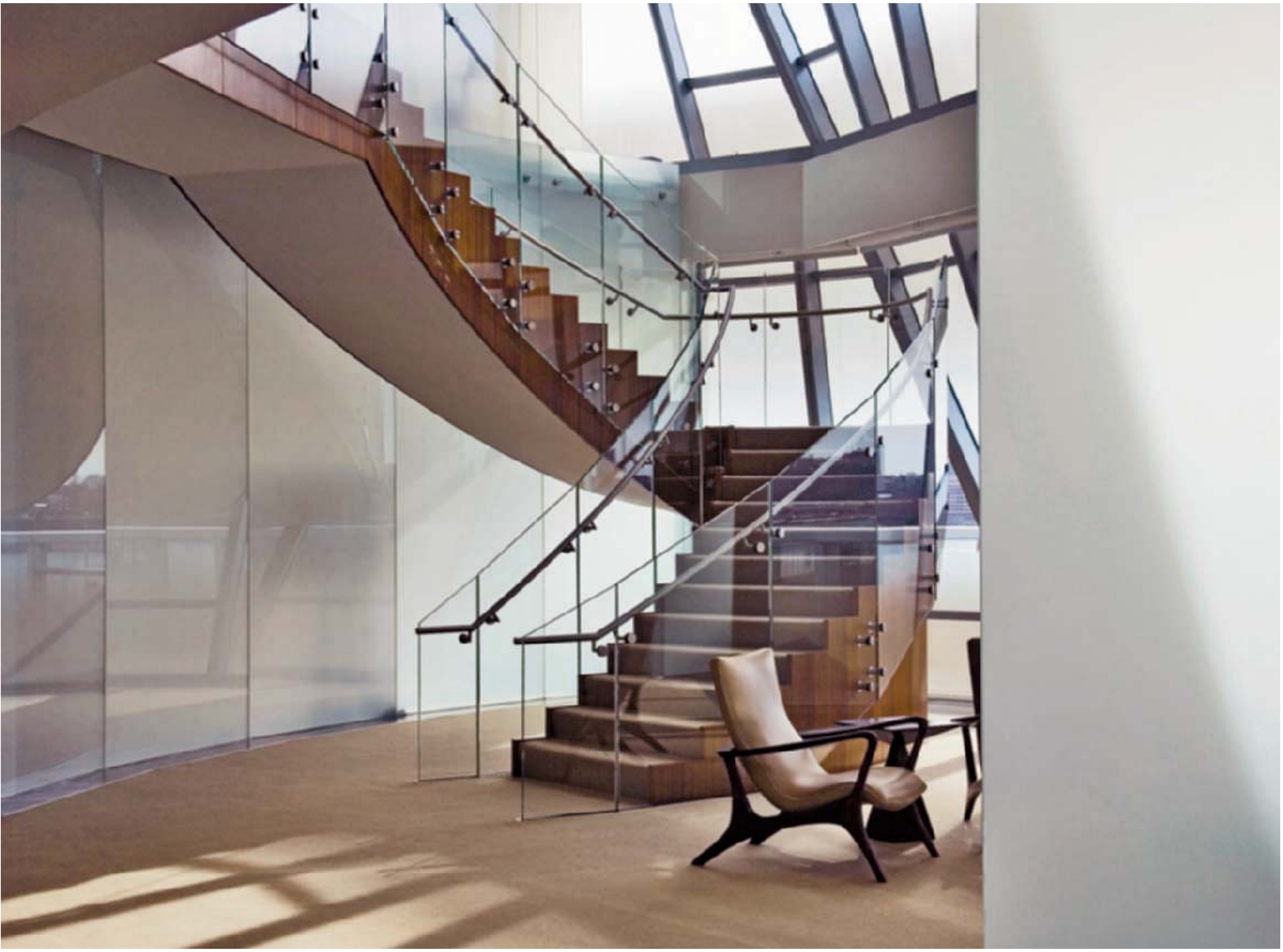
Doughnut-shaped pendant light: *SPI Lighting Options*

Paints: *Benjamin Moore*

ONLINE: To rate this project, go to **architecturalrecord.com/projects/**. Submit your project to **construction.com/community/gallerylist.aspx**.



In the lobby, a 20-foot-long media wall behind the reception desk, presents information about IAC and its brands (left). A snaking bench (left in photo) was designed by Gehry. An internal stair (below) connects executives on the sixth and seventh floors.



STUDIOS designed each floor with both open and private offices (top) and a variety of conference rooms (above). Colors and finishes change from floor to floor and even within one floor, reflecting the diversity of IAC's many brands. Colored-glass panels provide further accents (opposite, top).

ANALYSIS: Martin Filler looks at Gehry's struggle with fenestration

Frank Gehry's current big-budget projects—especially his controversial Atlantic Yards in Brooklyn, New York—overshadow most of the smaller projects he has done recently. However, the modestly sized IAC headquarters has attracted widespread attention, not only thanks to Gehry, but because of his boldface-name client, media entrepreneur Barry Diller, founder of IAC and a former chairman of Paramount Pictures and Fox. Not since onetime Hollywood über-agent Michael Ovitz tapped I.M. Pei to design the CAA headquarters in Beverly Hills (completed in 1989) has a mogul commissioned a celebrity architect to create a bijou trophy scheme that amounts to a veritable microcosm of the designer's signature style.

The billowing, glass-skinned forms of this

Martin Filler is the architecture critic of House & Garden *and contributes to other publications.*

nine-story structure are firmly in the architect's post-Disney mode, and both his Los Angeles concert hall and Manhattan office building are reflexively likened to sailing ships. But IAC represents a real breakthrough for Gehry. Its cleverly handled exterior surface suggests an adaptable solution to his problem with reconciling repetitive windows and idiosyncratic, biomorphic forms.

The halo effect of Bilbao and Disney has obscured the fact that several of Gehry's designs during the decade leading up to those two masterpieces were marred by serial fenestration working at cross-purposes to eccentric massing. In those long-ago days when a Gehry project could be more or less boxlike—such as his 1982 Burns Hall at Loyola Law School in Los Angeles—individual windows did not compromise the facades. But the undulating forms of such 1990s schemes as his Neue Zollhof development in Düsseldorf and "Fred and Ginger" building in Prague did not gracefully accommodate rows of rectangular windows. Due to their internalized functions, neither Bilbao nor Disney need the quantity of windows required for office or apartment buildings. Indeed, museums and auditoriums have traditionally been among the most inward-turning, even hermetic, of buildings.

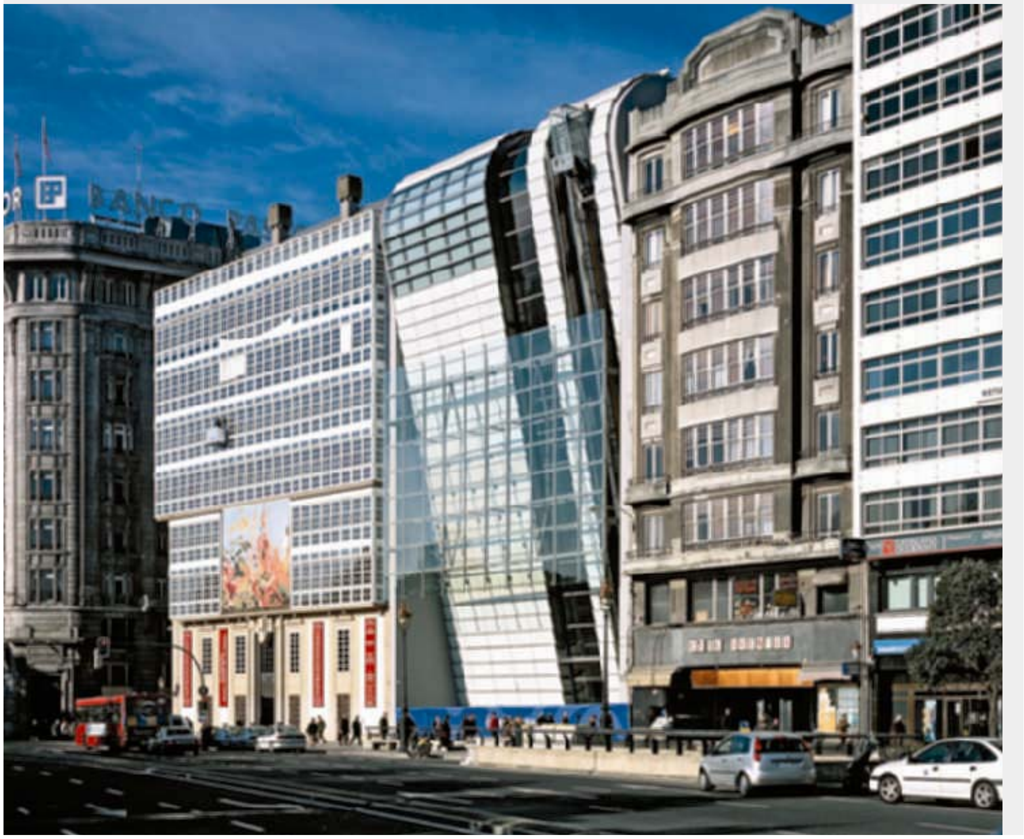
At IAC, Gehry specified white, ceramic-fritted glass in vertical panels with horizontal gradations ranging from opaque to translucent to transparent. The progressively shaded glazing serves two main purposes: providing a taut exterior that conceals structural and service components, and bringing generous amounts of daylight into the office interiors. The typically irregular patterning of recent Gehry buildings with through-wall windows—including his Stata Center of 2004 at MIT in Cambridge, Massachusetts—is superseded at IAC by broad, continuous bands that wrap around the structure and give it a vaguely Streamline Moderne feel.

Despite the apparent sleekness of IAC's skin when viewed from afar, closer inspection reveals its assembly to be acceptable but hardly elegant. However, meticulous detailing has never been Gehry's strong suit, and its lack has never compromised his work. More to the point, Diller has boasted of keeping the visionary architect on a short budgetary leash. Frankly, this building would not have been appreciably better if more millions had been lavished on it.

Diller's rationale for hiring Gehry—whose corporate clients have been outnumbered by private, cultural, and educational patrons—echoes the motivation of the advertising executive Jay Chiat, who believed that Gehry's Chiat/Day building (completed in 1991) in Venice, California, would stimulate his young employees' creativity. The buoyant quality of the office spaces at IAC, some of the most delightful corporate interiors in recent memory, shows how well Gehry still responds to an engaged, demanding client.

Despite the vast, amorphous street-level lobby left vacant for nighttime party rentals, several flourishes on the stories above signify that this is capital-A architecture, such as the curving stairway that connects the building's sixth and seventh stories, and the employee cafeteria, with dramatic views of the Hudson River to the west. The building's overall effect is that of a recognizable master working in a playful but not frivolous mode. Gehry's IAC is a welcome adornment to a city where corporate architecture is almost always pompous and overbearing, and one hopes this is a harbinger of what we can expect from its protean creator as he approaches his ninth decade. ■

Grimshaw Architects bends over backwards to address historical context for Spain's CAIXA GALICIA FOUNDATION

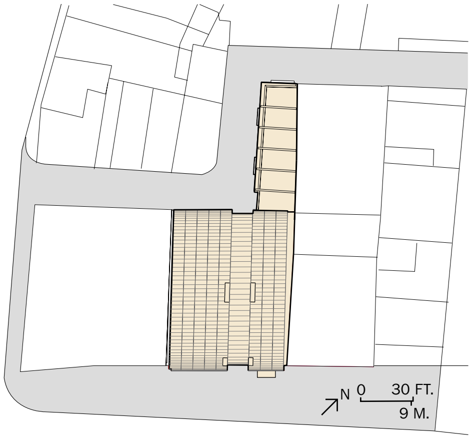


By David Cohn

The Caixa Galicia Foundation, a regional cultural center designed by Grimshaw Architects, packs a lot of design intensity into a small but prime port-side site in La Coruña, on Spain's northwest Atlantic coast. Only 72 feet wide, its custom-designed facade forms a single eccentric gesture, parabolic and off-kilter in section, that nevertheless takes a respectful place among the glazed wooden galleries of the city's traditional seafront buildings. It plunges three floors below the sidewalk to bring natural light to an underground gallery and auditorium, and rolls over the top of the building to drop down to the intimate scale of the pedestrian alleys behind it. A full-height central interior atrium stuffed with stairs and glass-floored bridges echoes this curving, unbroken exterior surface as it slices through the building.

The foundation is one of the philanthropic ventures of a local savings bank, which commissioned the building as the flagship of its eight cultural centers throughout the politically autonomous region of Galicia. "They were looking for very high standards in everything," says project architect Kirsten Lees, "exceeding what you would normally expect for what is actually a relatively small gallery." The clients also encouraged the architects to "break new ground." Lees, based in Grimshaw's London office, says the client "wanted to be the first to explore a lot of different elements and innovative materials." Such attention required an extended development and construction period (as well as a substantial budget, although the client has not disclosed costs). Grimshaw won a limited competition for the project in 1997, edging out Foster + Partners in the final round, and spent more than two years in design development and almost six in construction for the 83,000-square-foot structure.

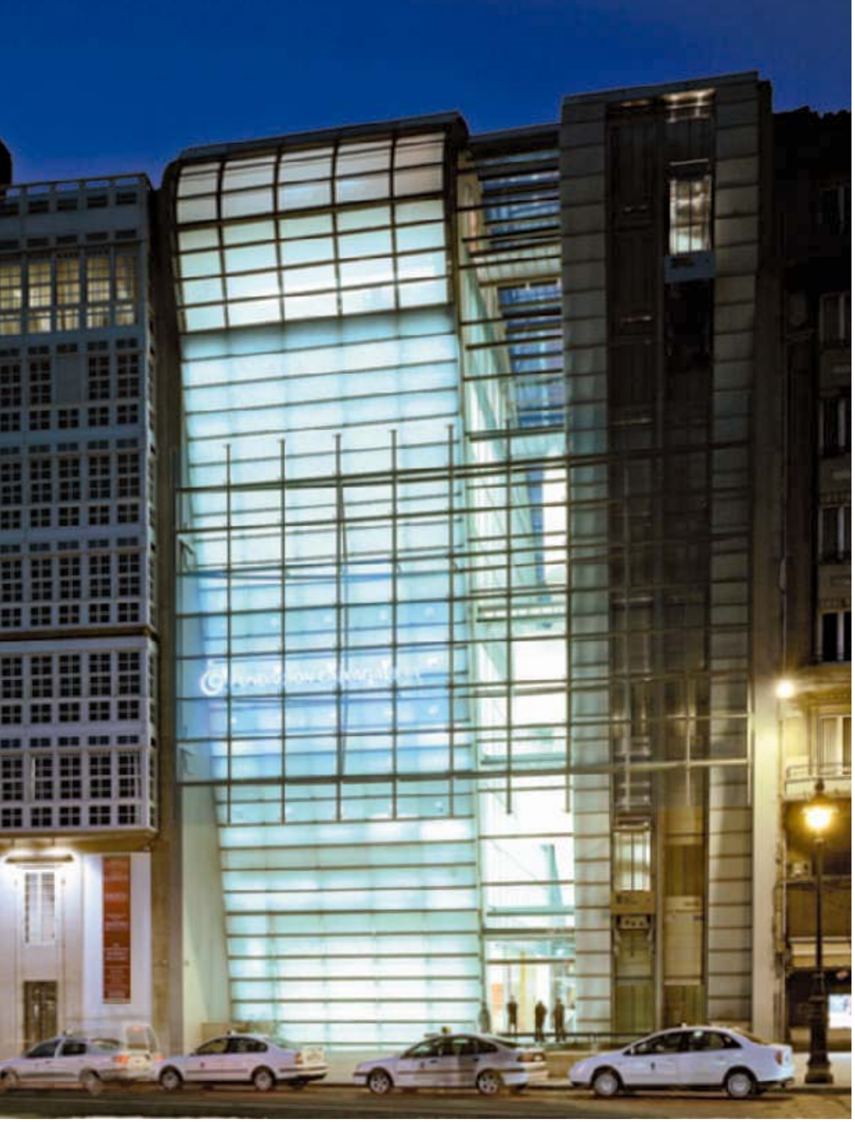
The building is straightforward in concept, although the large program for the limited site added complexity. Its massing completely fills the permitted zoning envelope's setback outline at the rear of the plot, which is literally traced by the curving back of the building. The atrium brings light from the boulevard and park facing the main entry into the pedestrian rear alley, while the ground floor, with its bookshop and cyber-

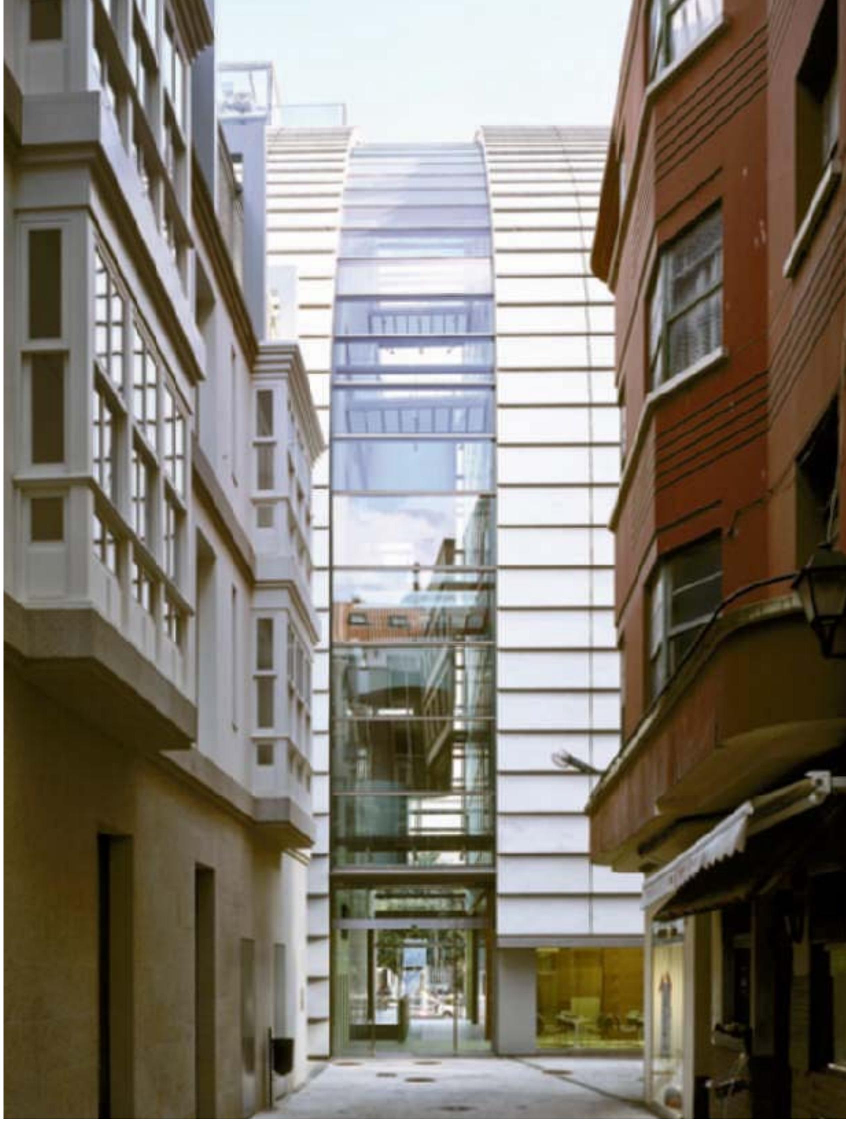


Along a historic promenade in a dense city, the Caixa Galicia Foundation combines Grimshaw's technological prowess with an appreciation of established urban patterns.

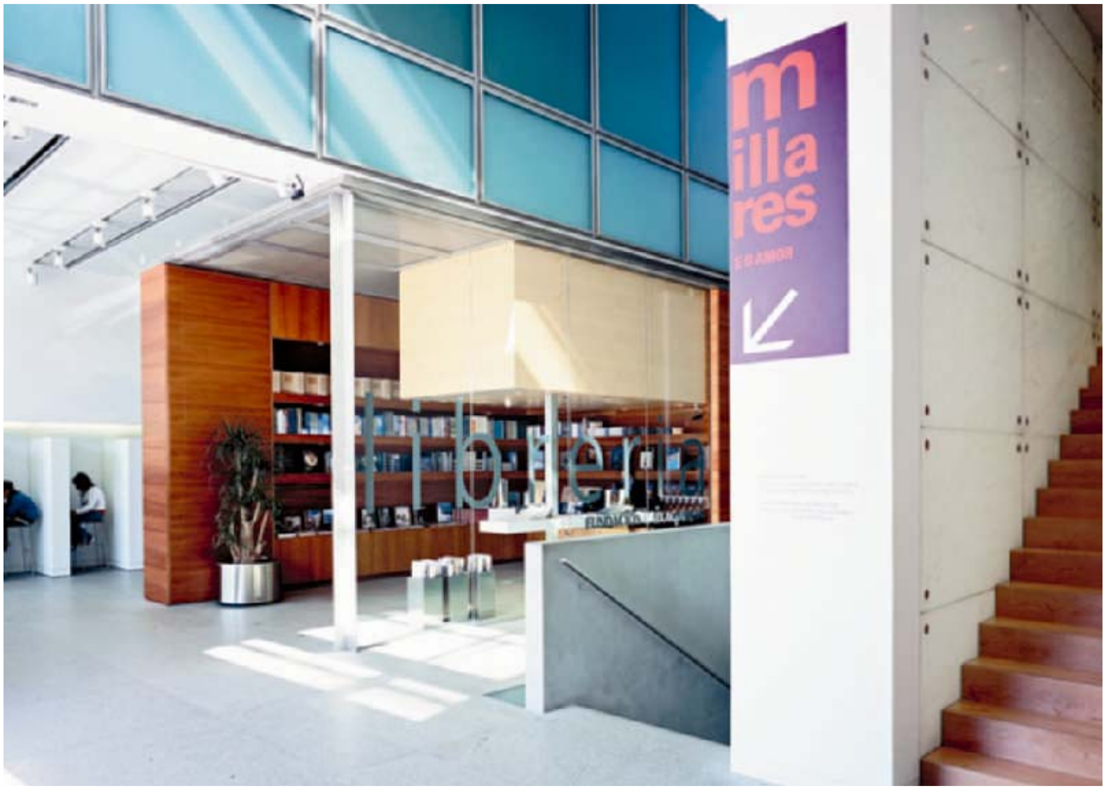
Project: *Caixa Galicia Foundation, La Coruña, Spain*
Architect: *Grimshaw Architects—Neven Sidor, director; Kirsten Lees, associate director*
Engineer: *Arup*
Acoustics: *Arup*
General contractor: *Dragados*
Cost consultant: *Davis Langdon & Edetco*

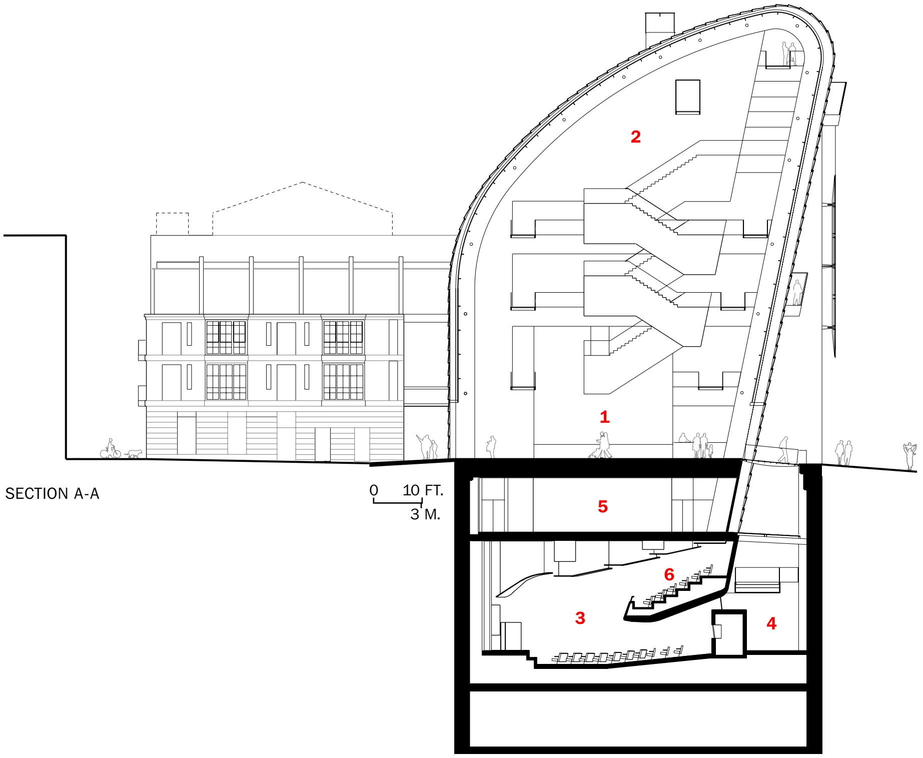
PHOTOGRAPHY: © EDMUND SUMNER/VIEW





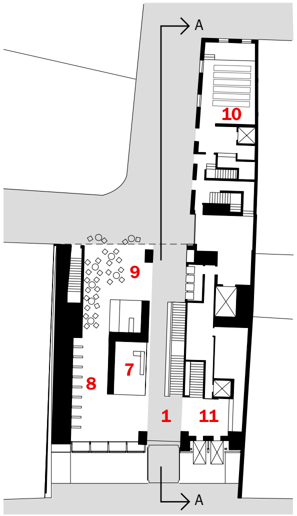
Grimshaw designed the building as an extension of the sidewalk, allowing pedestrians to pass from front walk to back alley via the interior atrium (this page). The facade's transparent holographic projection screen serves the center's publicity needs (above).



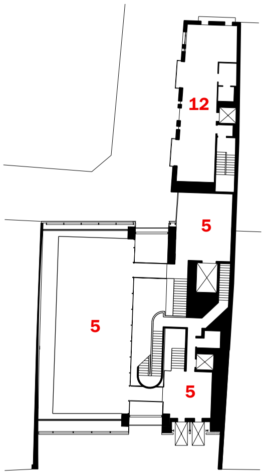


SECTION A-A

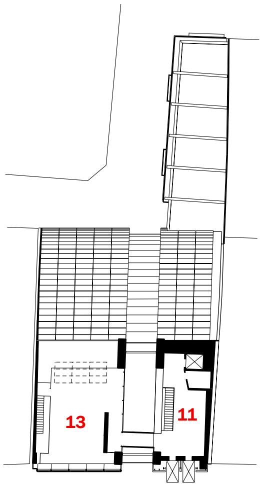
1. *Lobby*
2. *Atrium*
3. *Auditorium*
4. *Foyer*
5. *Gallery*
6. *Auditorium balcony*
7. *Bookshop*
8. *Internet café*
9. *Café*
10. *Pressroom*
11. *Reception*
12. *Offices*
13. *Dining room*



GROUND FLOOR



FIRST FLOOR



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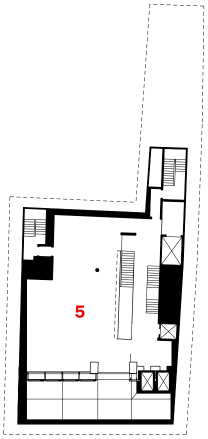
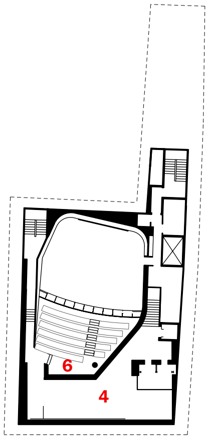
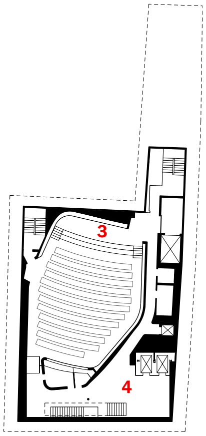


BASEMENT LEVEL 01



BASEMENT LEVEL 02



BASEMENT LEVEL 03

Project architect Kirsten Lees talks about the "bespoke" nature of many of the building's features, such as the atrium, as if commenting on a custom-tailored suit, an apt metaphor for what she calls the clients' "high aspirations" for the project.

Inside the building, foundation director Fernando Prieto praises the flexibility of the galleries, with their 16-foot ceilings and entry and exit bridges that facilitate organizing a clear route through exhibitions (this page). The floors and casework of the curvilinear fourth-floor gallery, tucked under the roof, are maple (right).

La Novia Cadaver

café, forms a visual and physical bridge between them. Above, three levels of galleries are crowned by the two private floors of the penthouse reception suite and the foundation boardroom.

The plunging main facade angles inward from the street wall as it descends, dropping to a below-grade sculpture court with a glazed floor—designed for point loads of more than 1,000 pounds—covering a double-height lobby for the 286-seat auditorium in the second basement. A glass-floored entry bridge, detailed like the atrium bridges with laminated-glass balustrades and stainless-steel handrails, spans this court at street level.

The design of the facade proved to be the architects' greatest challenge. Lees explains, "We were looking for an all-enveloping skin that adapts to all the main elements of the building, so that on first impression it's very simple, but as you get closer you read the different levels of complexity." Working with the fabricators Seele Austria GmbH, they developed a system of angled horizontal panels, like clapboards in appearance, that roll over the entire building. Solid panels are composed of translucent marble framed in glass, only 0.15 inches thick and more than 6 feet long, which can be backlit at night. Lees reports the panels can bring a muted glow of light into the galleries during the day, although they are currently blocked off for exhibition purposes. The panels were produced by laminating 0.3-inch-thick sheets of marble between glass and slicing the composite in half, relying on the strength of the glass to maintain the stone intact. The architects found that exposed marble would have been too fragile for the corrosive, rainy seaside climate. Nevertheless, the marble loses much of its tactile quality under glass, making the effort expended in its elaboration seem questionable.

The system includes several other curious details. On the rear facade, the marble panels overlap one another as they rise, like traditional angled clapboards, but as the assembly rolls over the building, they drop down the main facade at a reverse, outward-leaning angle, with hidden drains to carry away rainwater caught in the exposed ridges between them. Lees explains that this detail is calculated to avoid "a dripping facade" in La Coruña's rainy climate. "At 11.5 degrees, water still adheres to the surface of the panel, and is actually pulled down. Then the hidden gutter takes it out." However, site architect Naiara Montero reports that, to the delight of many visitors, rainwater cascades down the curving glass of the atrium's rear wall "like a waterfall." In this sense, the design team seems to have gotten carried away in addressing some of the issues raised by their facade concept while overlooking others. Together with the custom-designed, all-glass elevator cabs, which glide up and down the leaning front of the building at a jaunty angle, the overall visual effect of the angled panels is kinetic, like an enormous strip-mine excavator or water wheel ready for action.

Only a generation or two ago, it would have been difficult to find a large, international practice contributing with such distinction to a consolidated historic context in a foreign land. The confidence and skill with which Grimshaw's team has inserted such an assertively contemporary structure into the parade of proud provincial commercial buildings along La Coruña's seaside promenade proves that a respect for the past by no means precludes cutting-edge technical and formal experimentation—a testament to the vibrant complexity of the traditional city as a living cultural artifact. ■

Sources

Glass curtain wall: *Seele/Fiberstone*
Skylights: *Seele*
Entrance doors: *Seele*
Acoustical ceilings: *Dytecsa*
Door hardware: *Arcon*
Paints and stains: *Pintanor*
Fixed seating: *Poltrona Frau*
Exterior lighting: *Zumtobel*
Elevators: *Schindler*

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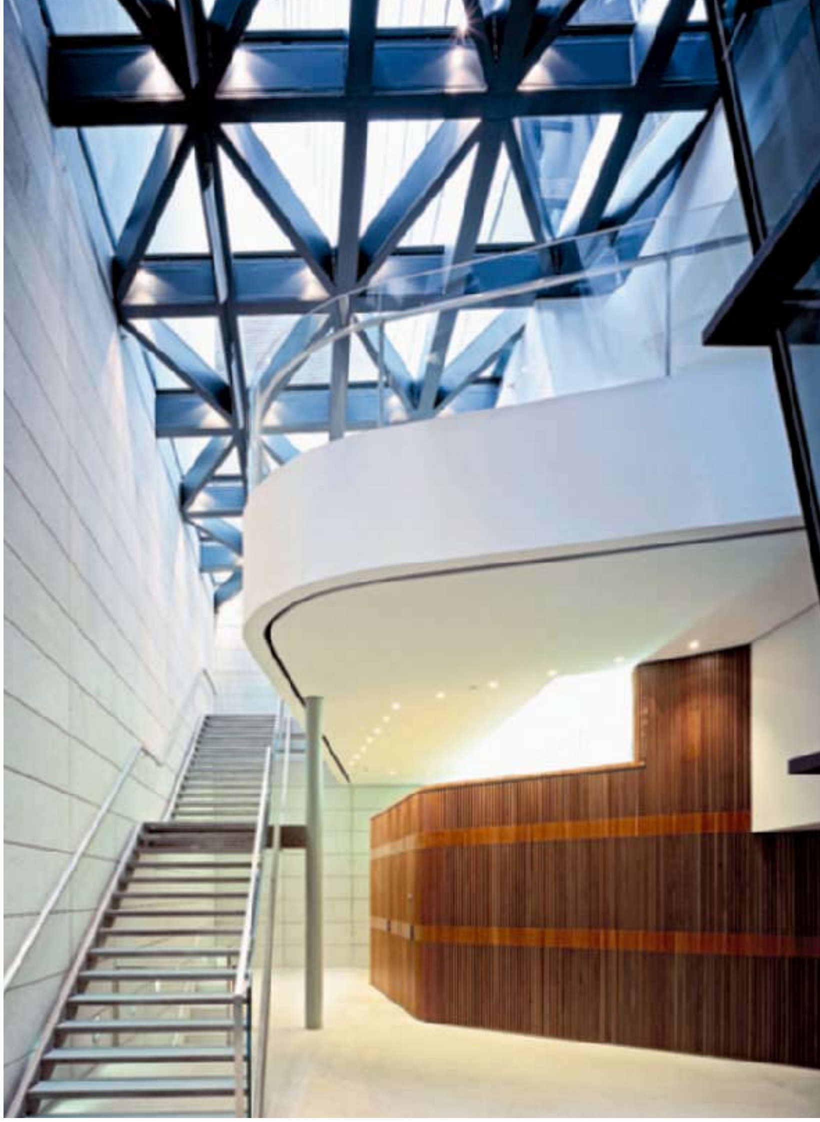
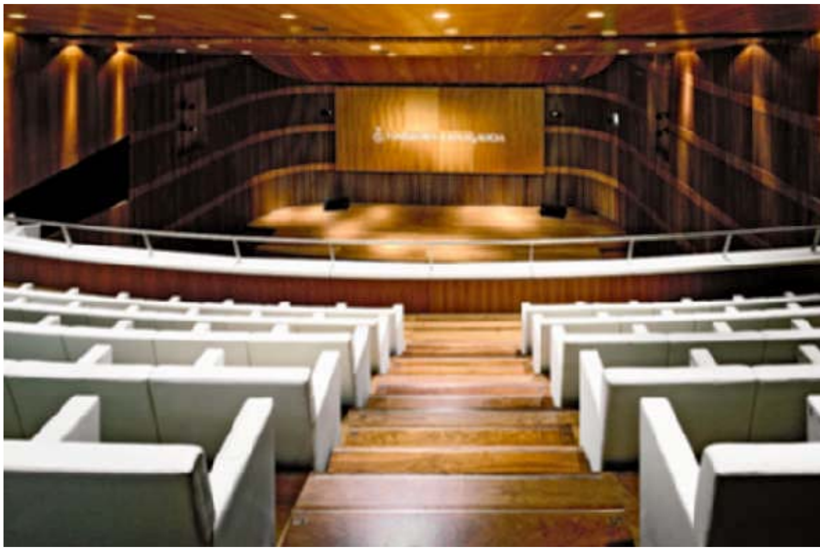
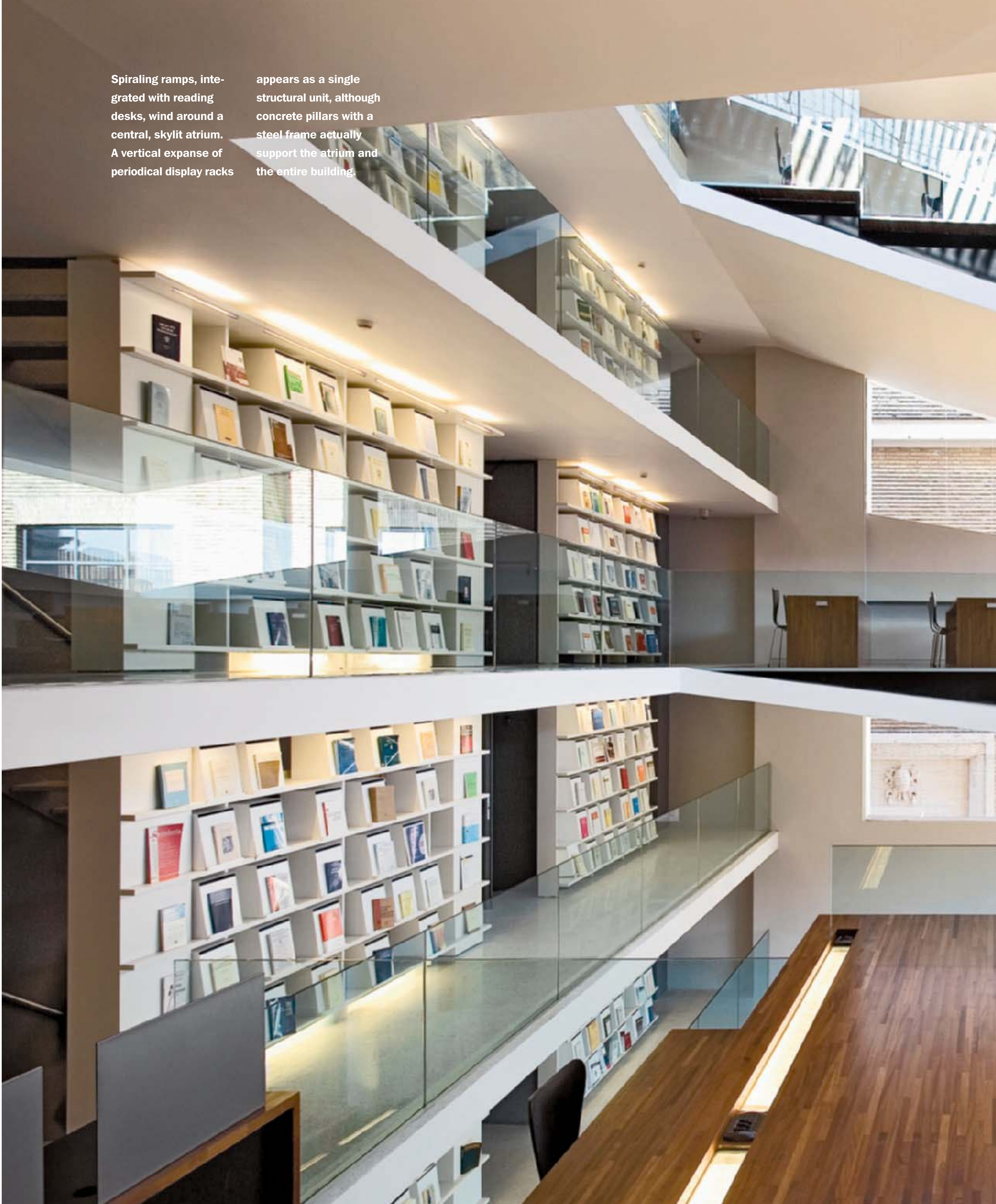


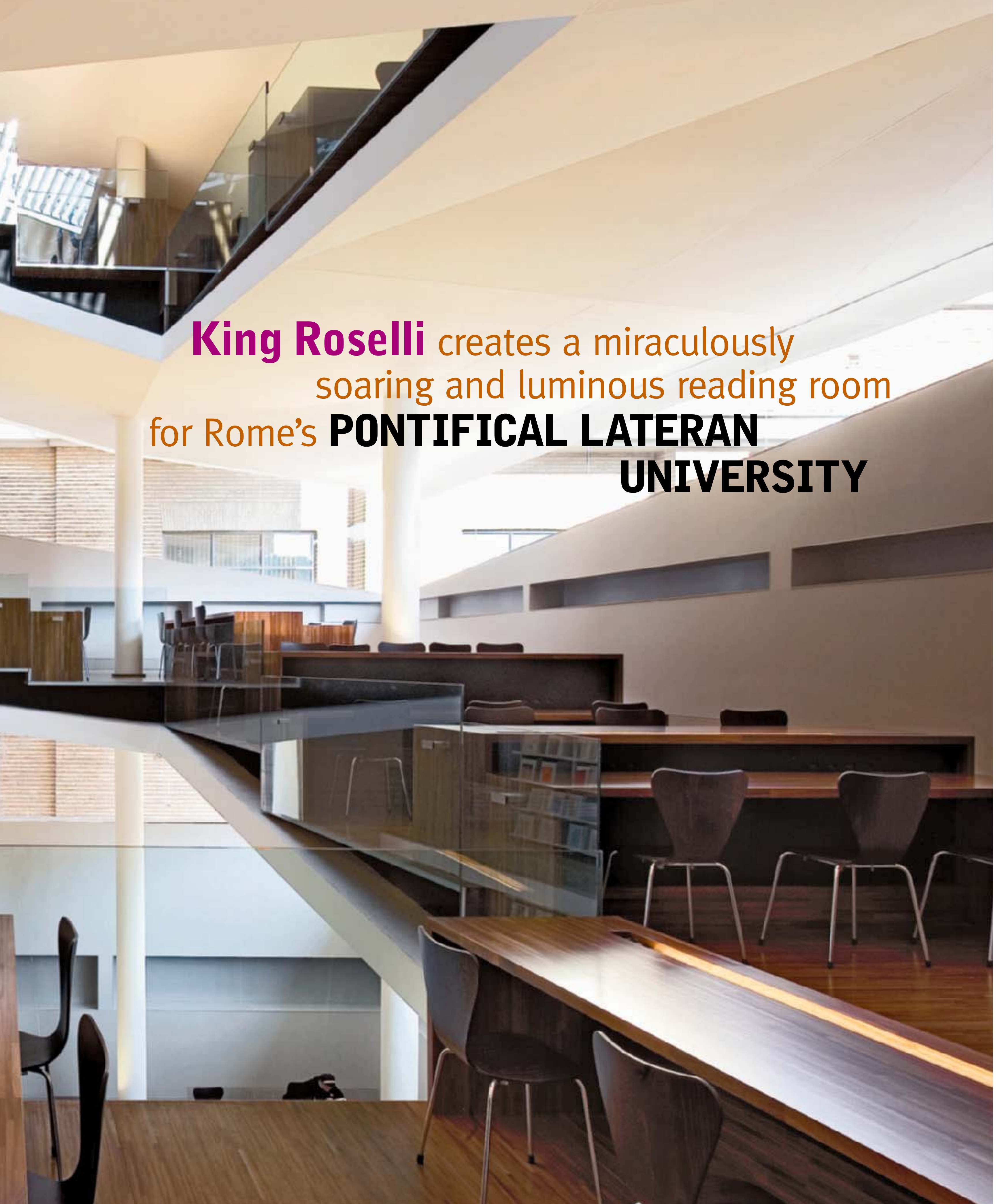


Maple and cherry veneers define the lower-level auditorium (above) and its foyer (top), which is crisply complemented with white leather seating.

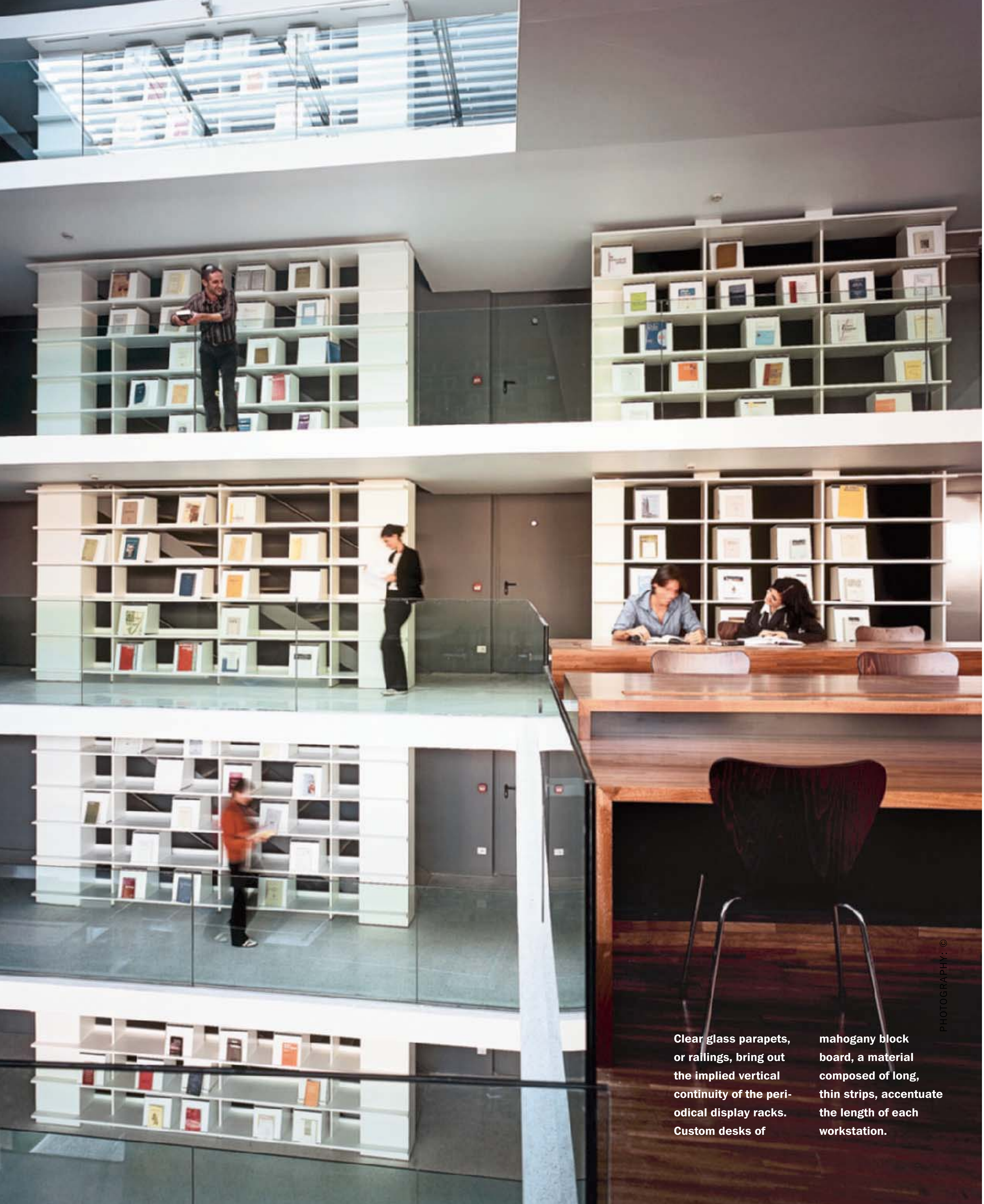
Arup's acoustic specialists in New York engineered vertical wood slats to conceal sound-absorbing adjustable curtains in the auditorium.



Spiraling ramps, integrated with reading desks, wind around a central, skylit atrium. A vertical expanse of periodical display racks appears as a single structural unit, although concrete pillars with a steel frame actually support the atrium and the entire building.



King Roselli creates a miraculously soaring and luminous reading room for Rome's **PONTIFICAL LATERAN UNIVERSITY**



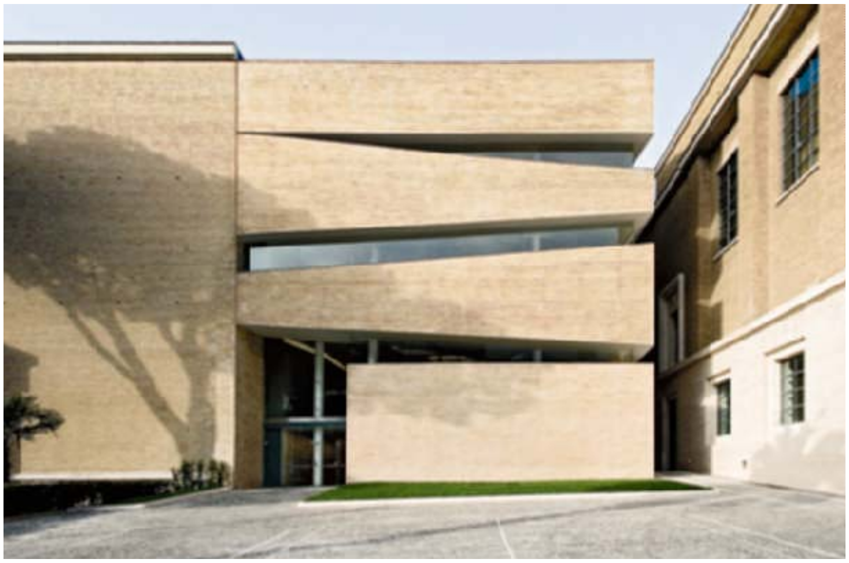
Clear glass parapets, or railings, bring out the implied vertical continuity of the periodical display racks. Custom desks of mahogany block board, a material composed of long, thin strips, accentuate the length of each workstation.

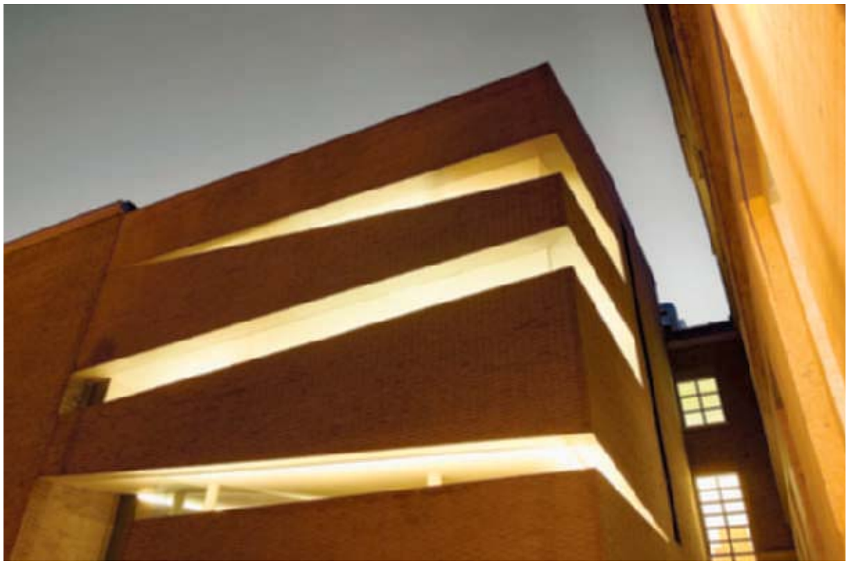
PHOTOGRAPHY: ©

By Paul Bennett

People have been living in Rome, the longest continually inhabited place on the planet, for the past 3,000 years. Every square inch of the city has, at some point, been the site of a building, road, or park—and most inches have seen all three—making space hard to come by. So, when the directors of the Pontifical Lateran University, one of Rome's Vatican-sponsored institutes of higher learning, needed to build a reading room for its library, they immediately thought of how little land they could spare and how much they needed to squeeze onto it.

The university, which grants undergraduate and graduate degrees in sacred philosophy and canonical law (prerequisites for many occupations in the Holy See), occupies a single building within the larger Lateran complex, the seat of the Roman diocese. A stolid and undistinguished stone-clad structure, erected in the 1930s during Italy's Fascist era, the original edifice is E-shaped in plan with three wings separated by two semi-open courts (one occupied by a 1.5-story portico from the 1930s and the other by a porchlike entryway added some 60 years later). The university—just yards from the basilica of San Giovanni in Laterano and its 3rd-century baptistery—barely had room to expand, except by demolishing the older portico. There, on a 4,410-square-foot parcel, the school's directors imagined accommodating spacious desks for 120 readers, plus storage and display for some 750 periodicals, as well as access to over 70,000 books (supplementing the existing library's holdings).





Abstractly evoking a teetering stack of books, the exterior volumes project between deeply recessed, tilting windows (right two).

Enter King Roselli Architetti [RECORD, December 2005, page 84], a young, English-Italian partnership that shook up Rome's rather static architectural scene in 2002 with its ES Hotel, now a Radisson SAS, near the Termini train station. Beyond ES's much-publicized flourishes—including a Philippe Starck–inspired interior with custom furnishings—it proved the firm's ability to complete a major project in a city that has interminably delayed, if not entirely thwarted, an impressive roster of architects. (Notable examples include Richard Meier, with both the Ara Pacis and Jubilee Church [RECORD, February 2004, page 100], and Rem Koolhaas, with his still-unbuilt shopping center, just beyond the city's ancient walls.) Adding to Rome's spatial constraints, its uneven, often shoddy construction practices, coupled with a subterranean layer full of valuable antiquities, can make the city a tough place to practice.

At Lateran University, the natural inclination may have been to build upward. But Vatican authorities required that the facade retain visual continuity with the existing three-story building, in part by not rising above it. (Only the reading room's back wall was permitted to poke a couple of feet above the old elevation it now abuts.) Pressure from so many different sides can cause an object to topple or implode—but here, perhaps it helped inspire the new library's architectural solution: a brick structure that virtually shifts and teeters like a tower of books. "This building is about movement," says Jeremy King, who founded the firm with partner Ricardo Roselli. "It's the idea of things stacked, about to fall."

From the exterior, the 21,500-square-foot addition subtly melds with its context, while starkly distinguishing itself from it. With the same long, narrow brown brick (itself proportionally derivative of the ancient Roman version) and clean, simple lines and geometry as the 1930s building, the reading library blends in neatly—at first glance. But then you notice how its tilted volumes, cantilevered as if suspended in air, deconstruct the box's straightforward geometry, making a strong 21st-century statement.

The major formal move here was to angle and deeply recess the windows, wrapping them around the building's exposed corner, where the new structure pulls back from the original one, suggesting distinct architectural volumes that float and zigzag up the exterior, rather than a conventional facade hung on a rectilinear frame. The effect is an eye-catching fancy—a fun building to look at. But step inside, and you recognize a scheme that not only opens up the space, but also integrates the reading areas ingeniously into a spiral of rectilinear ramps.

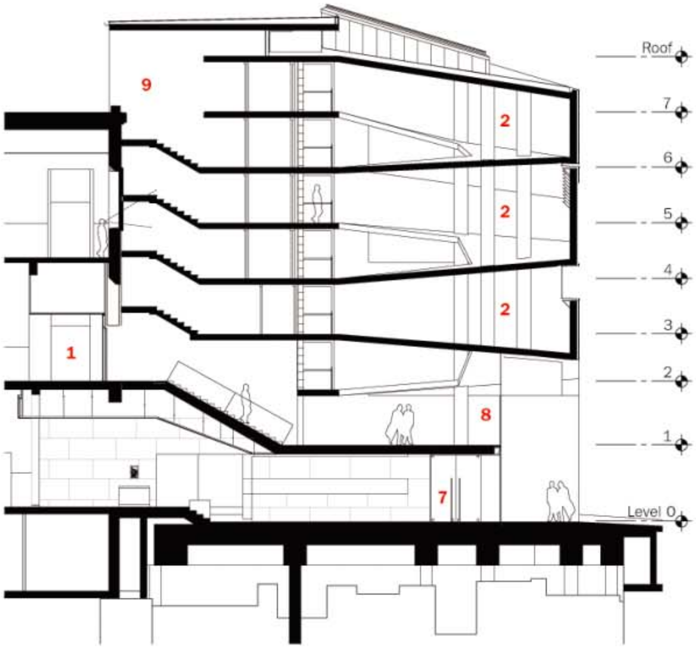
To fit in so much program

Paul Bennett, based in Paris and Rome, frequently writes about architecture.

Project: *Library Extension/Reading Room, Pontifical Lateran University, Rome*

Architect: *King Roselli Architetti—Ricardo Roselli, Jeremy King, partners in charge; Andrea Ricci, project architect; Giandomenico Florio, Ulich Grosse, Christina Hoffmann, Arianna Nobile, Enrica Testi, Katia Scarioni, Toyohiko, project team*

PHOTOGRAPHY: © SANTI CALECA, EXCEPT AS NOTED; JOSÉ KING (OPPOSITE)


Roof
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Level 0
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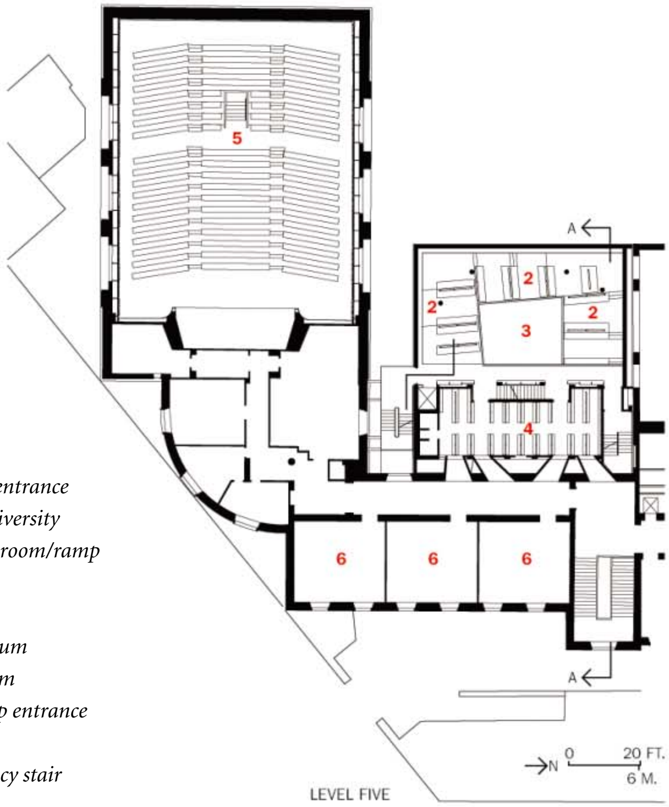
2
1
8
7

SECTION A-A

1. *Library entrance from university*
2. *Reading room/ramp*
3. *Void*
4. *Stacks*
5. *Auditorium*
6. *Classroom*
7. *Bookshop entrance*
8. *Foyer*
9. *Emergency stair*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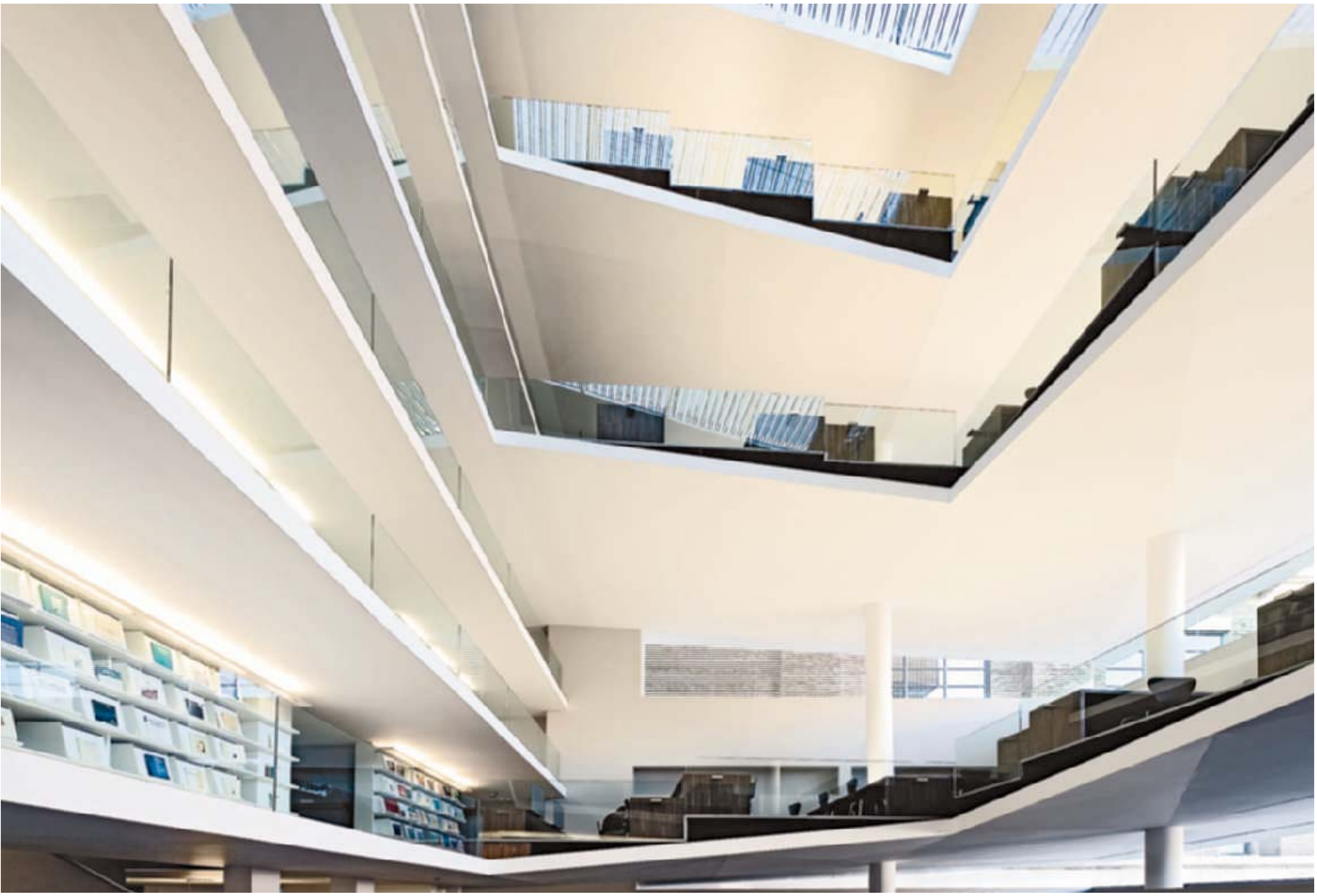
LEVEL FIVE



The atrium skylight, the white undersides of the spiraling ramps, and the periodicals racks' electric illumination all contribute to the space's luminous quality (above and opposite). The clear glass railings allow for a pure, unencumbered reading of the ramps and mezzanine floors, with their crisp, shelflike edges.

PHOTOGRAPHY: © JOSÉ KING (OPPOSITE)

without making the interior closetlike, the architects created an expansive, light-filled core, surrounded by relatively low ceilings, only 10 feet high. Unlike the vast closed stacks in the existing library's basement, the reading room's 70,000-volume collection is freely accessible to readers, though shielded behind fire doors. For the periodicals, however, completely open display racks rise the full height of the back wall. From afar, these vertical elements look like one continuous structural unit on which the building hangs—an idea inspired by Rem Koolhaas's competition scheme for Paris's Grand Bibliothèque (1992). The Lateran building actually hangs from a steel frame with concrete pillars, many exposed on the interior. King Roselli's structural system not only supports the atrium—as well as the entire new building—but also allows the facade to cantilever out.

Functionally connecting the addition to the everyday lives of the students, the architects routed their library's main access through the original building via a simple staircase, instead of creating a grand new formal street entrance. (The project also included a small bookshop at grade and the refurbishment of an auditorium inside the old building.) In the reading room, a ramp and staircase, formed by thin slabs of concrete surfaced in mahogany block board (with travertine edges), wind up and around the soaring, skylit void. Custom desks of the same wood, by King Roselli with carpenter Claudio Devoto, overlook the open well. The material's long, thin strips accentuate the work surfaces' length. From the ramp, as you gaze over these handsome desks, through the glass parapet, across the atrium, and toward the periodicals racks—that seem to emerge from the floor and hold up the ceiling—you perceive the room as far larger than it truly is.

Balancing the interior experience with views out became an obsession for the architects, says King. Since library users move continually along the ramps, the windows needed to slant, but without always literally echoing the sloping floor planes. In fact, the windows often tilt in directions opposite to the ramps. "The views are extremely calculated," says King. At one moment, you see a framed tableau of the basilica across the street; a few steps farther, its Baroque portico; then, a glimpse of the clear Roman sky and a piece of the baptistery. "We played with cardboard for a long time," he says, referring to the several dozen models his firm constructed, testing many facade variations. The final result may look haphazard and playful, but it serves the very real function of making 2,000 square feet feel like 20,000. ■

Sources

Glazing: *Illi Serramenti*
Hardware: *Iseo; Geze; Hafele; Cisa*
Lighting: *iGuzzini; Baldieri*
Furniture: *Devoto Arredamenti; Poltrona Frau (custom)*

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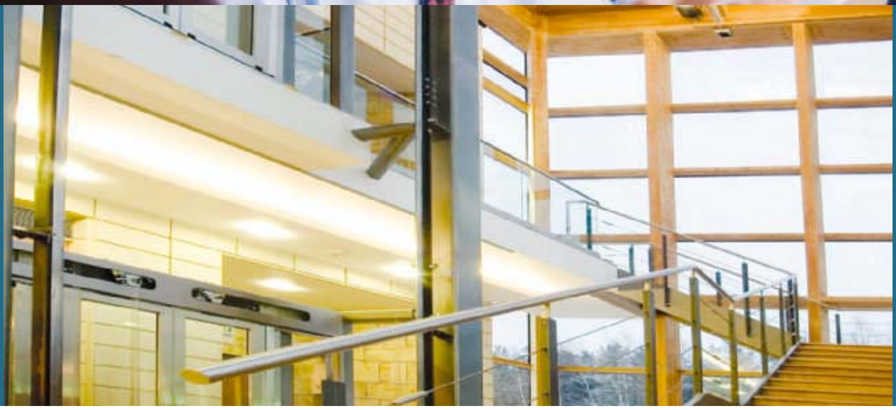

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Expanding Design

When design hotels began proliferating in the 1980s, they were small, boutique operations. Now they may be that, and more, in size and the nature of the offerings.

PHOTOGRAPHY (TOP TO BOTTOM): © UNDINE PRÖHL/COURTESY HOTEL LA PURIFICADORA; BLAKE MARVIN; COURTESY ADAM & EVE HOTEL

HOTEL LA PURIFICADORA

Puebla, Mexico

Within the walls of an old water purification plant, Legorreta + Legorreta creates an arresting array of open and closed spaces, using both Modern and historic vocabularies.

W DALLAS VICTORY HOTEL & RESIDENCES

Dallas, Texas

A hotel and condominium tower designed by HKS serves as a linchpin for a new mixed-use development near downtown Dallas.

ADAM & EVE HOTEL

Belek, Antalya, Turkey

Istanbul-based architect and designer Eren Talu has created a vast pleasure palace on the Turkish Riviera, which features mosaic-tiled public spaces, mirrored interiors, and Minimally white guest rooms.

By Suzanne Stephens

The proliferation of design hotels continues unabated. As we have noted in the past [RECORD, August 2004, page 135], hotels that emphasized Minimal or Minimal-with-a-twist design began to be identified as a genre in the 1980s, owing much to Ian Schrager's arrival on the scene. Yet even they had been preceded in the 1970s by antique-filled boutique hotels, often in renovated town houses or small commercial structures, which had sprung up in response to the kudzulike growth of monotonous, file-box chain hotels.

Now, more and more, large hotel chains see a future in design. Starwood, which owns Sheraton and Westin, proved with the W hotels it formed in 1999—the W Dallas Victory is featured here—that it could create a youthful design image with a medium-size hotel. And Schrager, who left the hotel company he founded, has joined up with Marriott International to start a boutique operation. Since this is a chain whose name is synonymous with boring, no-style accommodations, Schrager's role is clear.

There are still other Schragers out there: Grupo Habita, the Mexican boutique hotel operation, which had Legorreta + Legorreta design La Purificadora in Puebla, Mexico, was started up by three brothers, Rafael, Moises, and Jaime Micha, along with Carlos Couturier, nine years ago. Their edgy hotels run the gamut from rough-cut to luxurious. Another company, Riva Hotels, belongs to the Kayi Group in Turkey, an international a-to-z tourist enterprise that also includes a travel agency, a car rental service, and an airline.The 500-room Adam & Eve Hotel designed by Eren Talu, which Riva opened last year near Antalya, Turkey, might be categorized as more of a department store than a boutique. But it clearly aims to be a design hotel, and in spite of its hugeness (or because of it), it is unique—a grandly Minimal environment that achieves an over-the-top showiness by virtue of size, lighting, and mosaics redolent of Byzantium.

As the three hotels shown on the following pages indicate, hotels of all sizes seek to attract locals and keep residents close to home by the addition of celebrity-chef restaurants and fanciful rooftop bars and pools—or in the case of Adam & Eve, the longest pool and the longest bar in creation. If Adam & Eve seems to desire to be a city in its own right, La Purificadora and W Dallas Victory are conceived to be integral to the urban contexts in which they exist. La Purificadora, closely knitted into the historic section of Puebla, should do much to reinforce the urbanity and vitality of the place. W Dallas Victory anchors a new mixed-use development near downtown Dallas and is adjacent to a sports arena. Since all three hotels forge their own versions of urbanity, they expand a design sensibility that goes beyond previous parameters—beyond the boutique. ■

One: HOTEL LA PURIFICADORA

Puebla, Mexico

Legorreta + Legorreta blend Modern, vernacular, and historic influences in a spaciously elegant hotel in a 16th-century city.

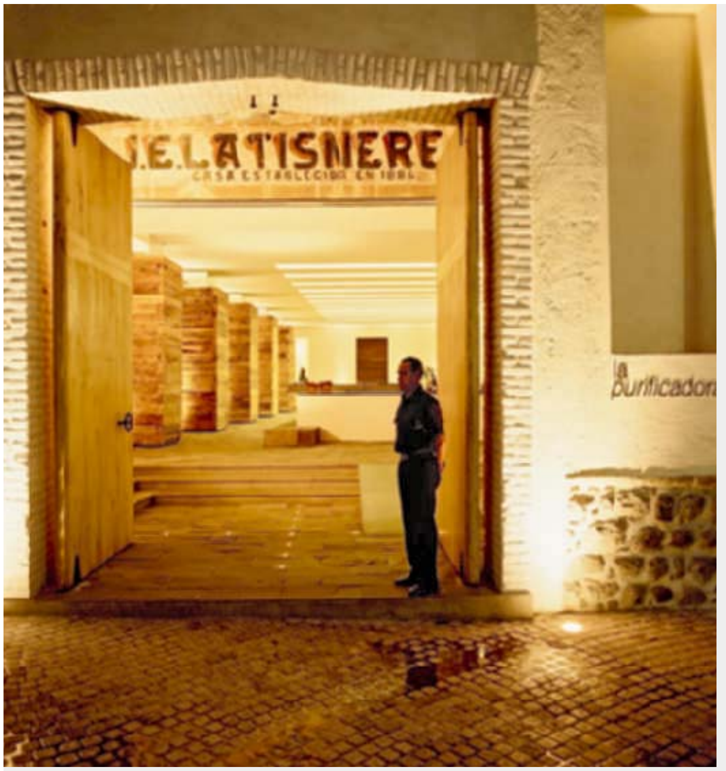
By Suzanne Stephens

Architect: *Legorreta + Legorreta—Ricardo Legorreta and Victor Legorreta, principals; Miguel Almaraz, Adriana Ciklik, Carlos Vargas, partners*
Associate architect: *Serrano Monjaraz Arquitectos—Juan Pablo Serrano, partner in charge; José Martín González, project architect*
Client: *Grupo Habita—Carlos Courturier, Moises Micha, Rafael Micha, Jaime Micha*
Engineers: *Elizarrarás Ingenieros Consultores (civil); García Jarque Ingenieros (structural); Proyectos de Ingeniería Eléctrica y Sistemas Automatizados (m/e/p)*
Consultants: *CENTRO (graphic design); Luz + forma (lighting)*

Size: *12,680 gross square feet*
Cost: *$5,116,600*
Completion date: *May 2007*

Sources
Masonry and concrete: *Grupo Huitzilin*
Metal/glass curtain wall: *Original Misión Tile*
Custom restaurant tables: *Grupo Mueblero Sertor*
Custom guest-room glass closets: *Arquicrise*
Custom guest-room desk, headboard: *Luis Manuel; Lara Hernández*

ONLINE: Rate this project and access additional sources at **architecturalrecord.com/bts/**.



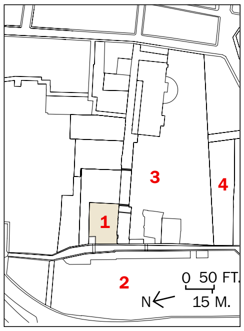
In the late 1960s, Ricardo Legorreta's Camino Real Mexico, in Mexico City, stunningly demonstrated that a hotel could be High Modern and ultra-glamorous. During a time when hotel-chain file boxes and souped-up Miami slabs dominated hospitality architecture, Legorreta's hotel, with its polychromatic, taut, planar stucco forms, interspersed with lushly landscaped outdoor rooms, set a new standard.

Fortunately for Puebla, a city about 80 miles southeast of Mexico City founded by Spaniards in 1531, the 76-year-old architect, now working with his son Victor, has brought his distinctive imprimatur to the heart of its historic section, listed by UNESCO as a World Heritage site. La Purificadora, the hotel Legorreta + Legorreta designed (along with the firm of Serrano Monjaraz Arquitectos), occupies the remains of an 1844 stone-walled factory where water was bottled and purified for ice. The team's knowing combination of Modern, vernacular, and historic architecture brings an appropriate sensibility to this locale.

Program

It helps to have the right client. Grupo Habita, an adventurous boutique hotel operation in Mexico City, was properly launched in 1998 when it had Enrique Norten turn a down-at-the-heels structure into the small, sleek, glass Habita Hotel [RECORD, March 2001, page 106] in the Polanco district.

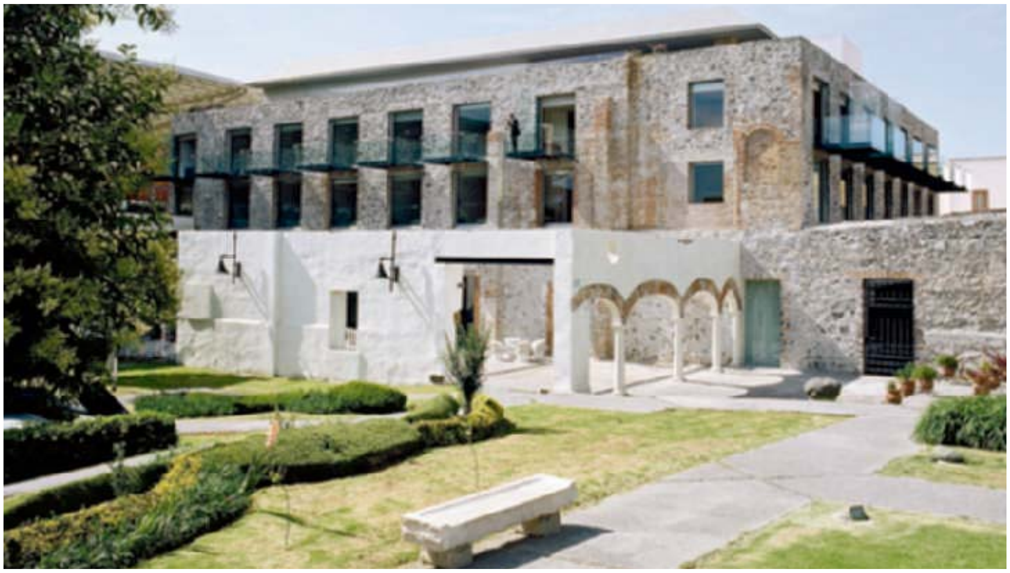
With its latest (and sixth) hotel, Grupo Habita was asked by a Spanish/Mexican real estate and construction company to conceive and operate the 26-room luxury hotel in Puebla. The hotel was to be knitted into the dense urban fabric adjacent to the Spanish Colonial San Francisco church, a convention center, sculpture park, a new shopping mall—all part of an urban-development plan known as Paseo San Francisco. Because the National Institute of Anthropology

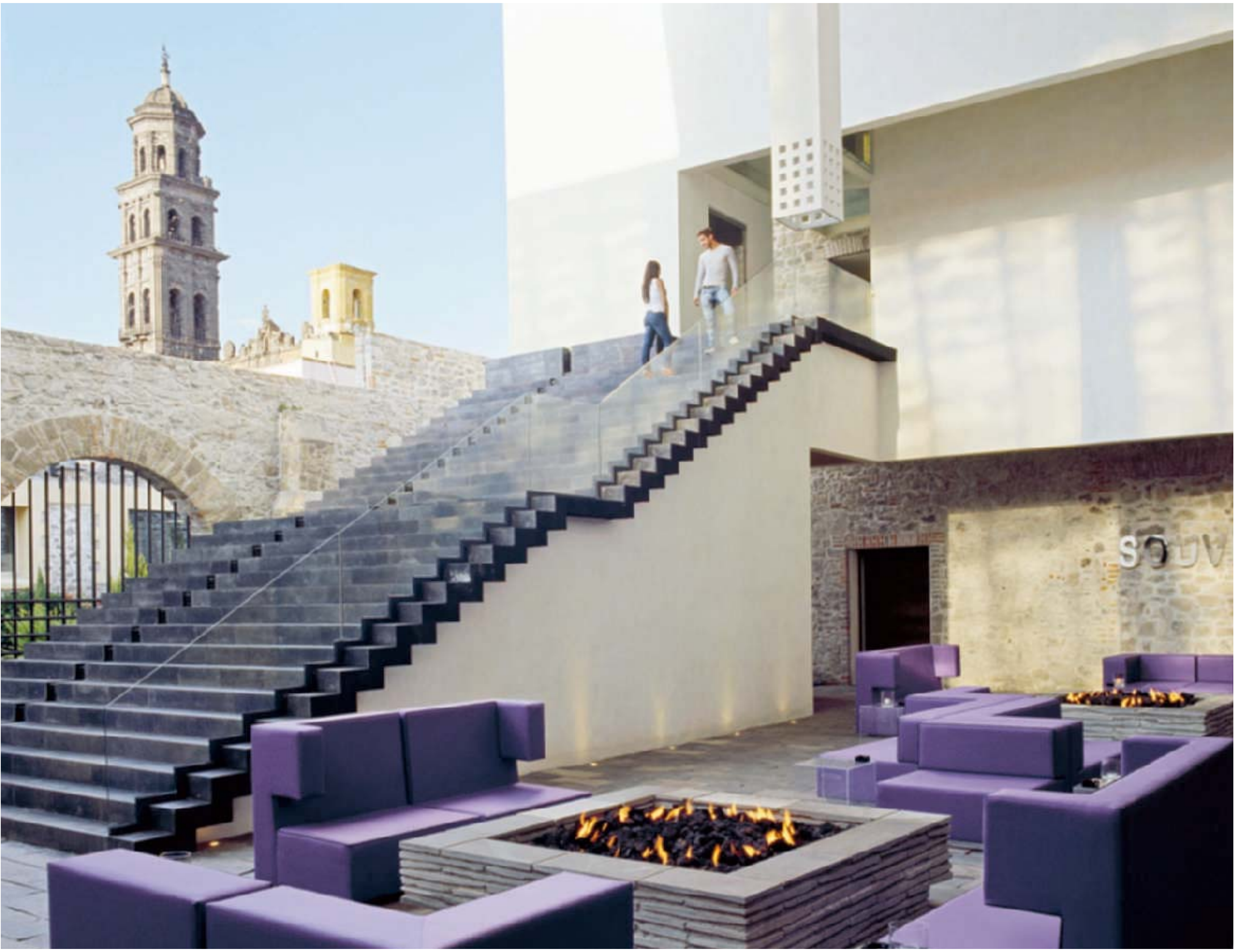


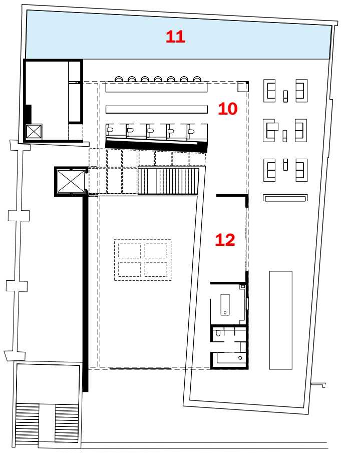
1. *Hotel*
2. *Convention center*
3. *Sculpture park*
4. *Shopping mall*

PHOTOGRAPHY: © UNDINE PRÖHL/COURTESY HOTEL LA PURIFICADORA

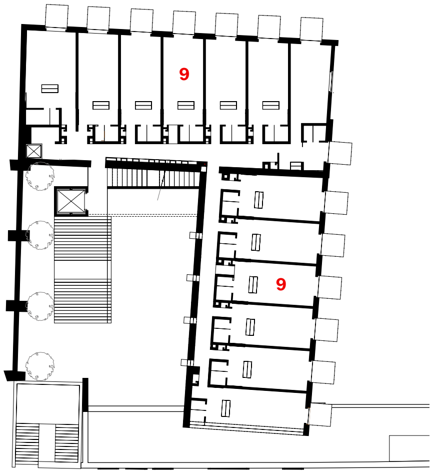
The entrance to the hotel still displays the name of the owner of the water purification factory (opposite). The hotel's south-facing guest rooms overlook an outdoor dining court and a sculpture park (right). The lobby/patio and grand stair (below) are sheltered by a skylighted roof, from which is suspended a columnar lantern.



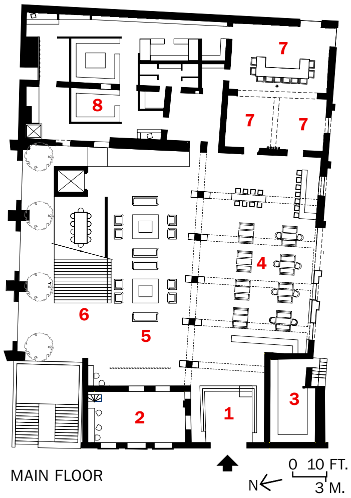




ROOF PLAN



THIRD FLOOR



MAIN FLOOR

At the front entrance of the hotel is the reception area (in center, below), a vestibule that retains the palimpsest of the factory, and the library/lounge beyond. Ramp and stairs lead to the restaurant (right) and lobby/patio with the grand stair.

1. *Entrance vestibule*
2. *Reception*
3. *Library/lounge*
4. *Restaurant*
5. *Lobby/patio*
6. *Grand stair*
7. *Event spaces*
8. *Kitchen*
9. *Guest room*
10. *Bar/lounge*
11. *Pool*
12. *Exercise room*

and History (INAH) had designated the building as part of the city's historic patrimony, the hotel design was given a fair amount of scrutiny by archaeologists.

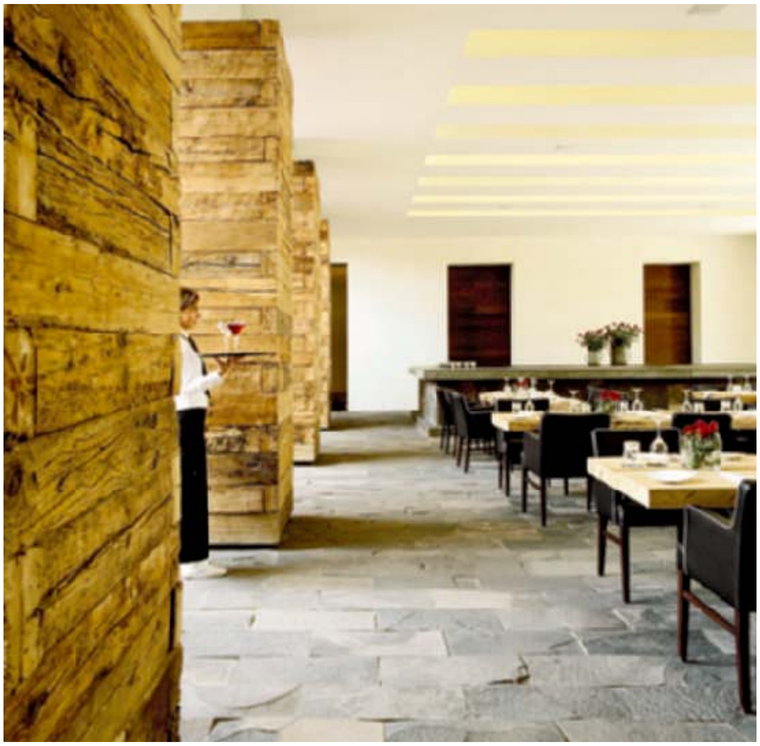
Habita sought out Legorreta because of his impeccable reputation. Legorreta, however, was leery of designing a "fashionable" hotel: So many boutique hotels in Europe and the U.S., he finds, get a bit tired after a while, and tend to be poorly planned. Here, both father and son saw a different challenge. "We wanted to maintain the roots of history and culture, yet be contemporary," says the elder Legorreta.

Solution

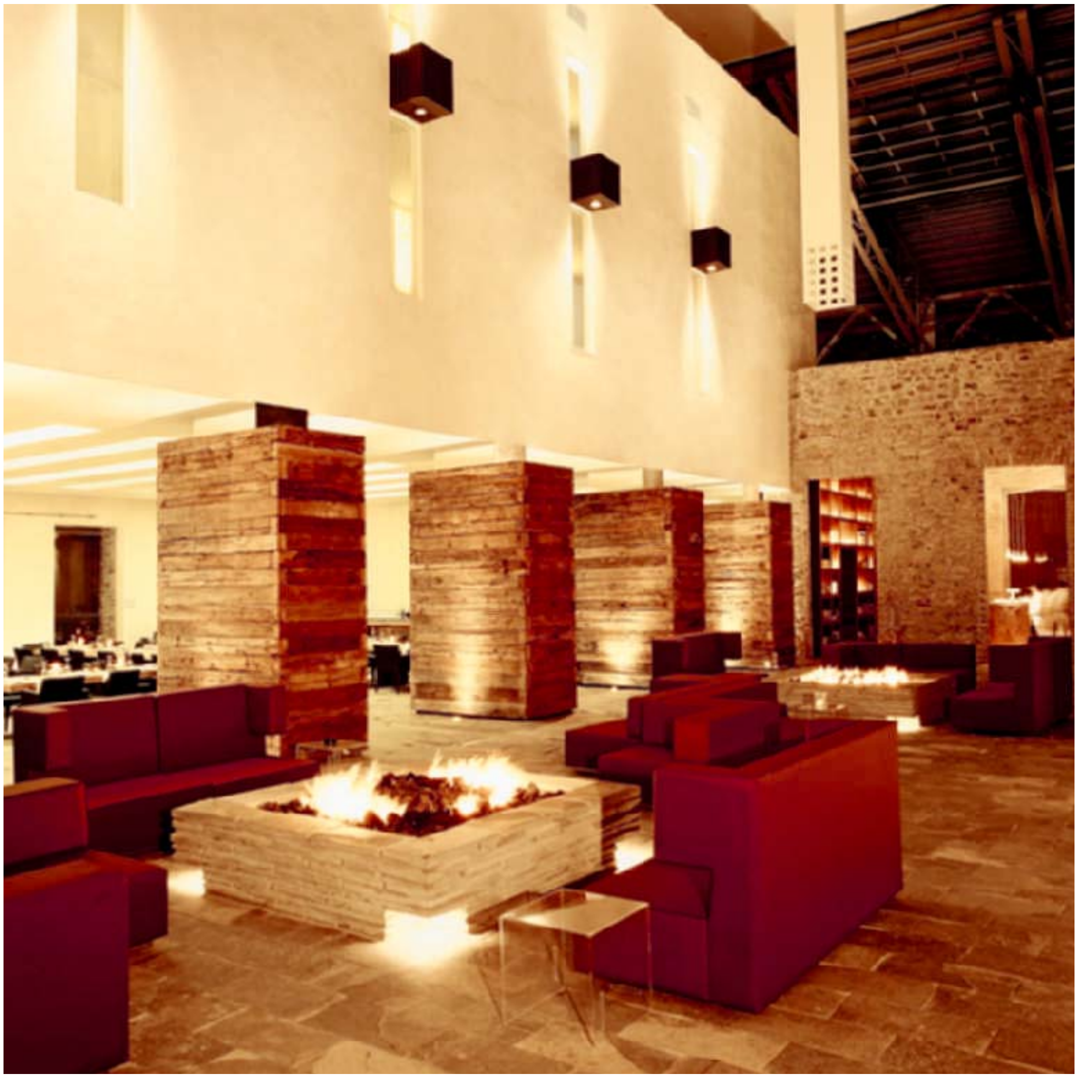
While keeping the local stone walls of the original one-story structure, Legorreta + Legorreta added three additional stories to the hotel—with a restaurant on the ground floor and a bar-lounge on the roof, complete with a long, glass-sided swimming pool and even a gym. The team reworked the original ground-floor entry to the old factory for the hotel entrance; it now opens onto a stone-walled vestibule, flanked by a small reception room on one side and library on the other. The hotel's spaces, including guest rooms, are arranged in an L around a large, sheltered, open-air patio warmed by open, stone fireplaces and a grand stair. "We have lost the pleasure of stairs," notes Ricardo Legorreta, who designed the dark volcanic stone staircase for sitting as well as for circulation. Where the stair terminates at the second floor, glass open-riser stairs continue to the third level and, finally, the sheltered roof terrace overlooking the city. (An elevator is available, as well.)

The guest rooms seem extremely spacious owing to the glass-enclosed, freestanding "closets" that divide the room between a sleeping space and dressing/sink area with stalls for shower and toilet. On the third level, glass doors open onto glass-enclosed balconies cantilevered elegantly from the masonry structure.

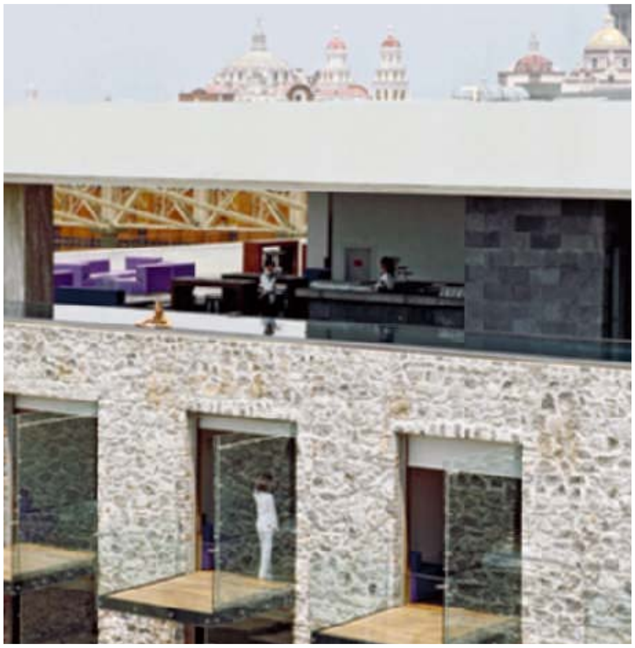
For new construction, the architects relied on masonry walls,

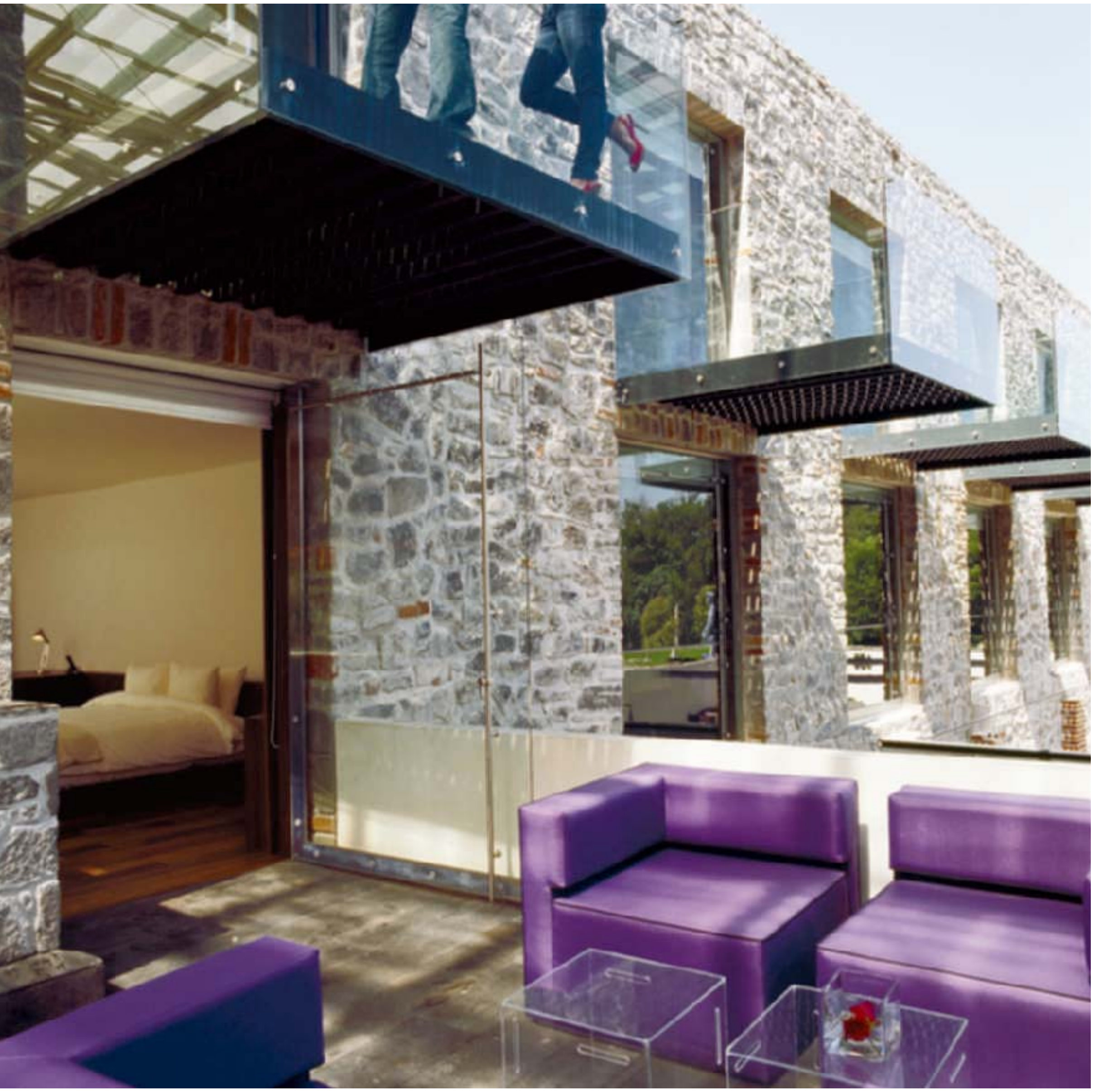


The architects recycled the old timber beams in the factory to create large piers that separate the dining room (left) from the patio, where custom-designed seating is organized around the fire pits (below).



The fourth-floor roof terrace offers enticing views of the old Spanish Colonial city (right). The third-floor guest rooms come with glass-enclosed balconies (right and below), cantilevered from the stone walls. A second-floor suite (below) features a large terrace.



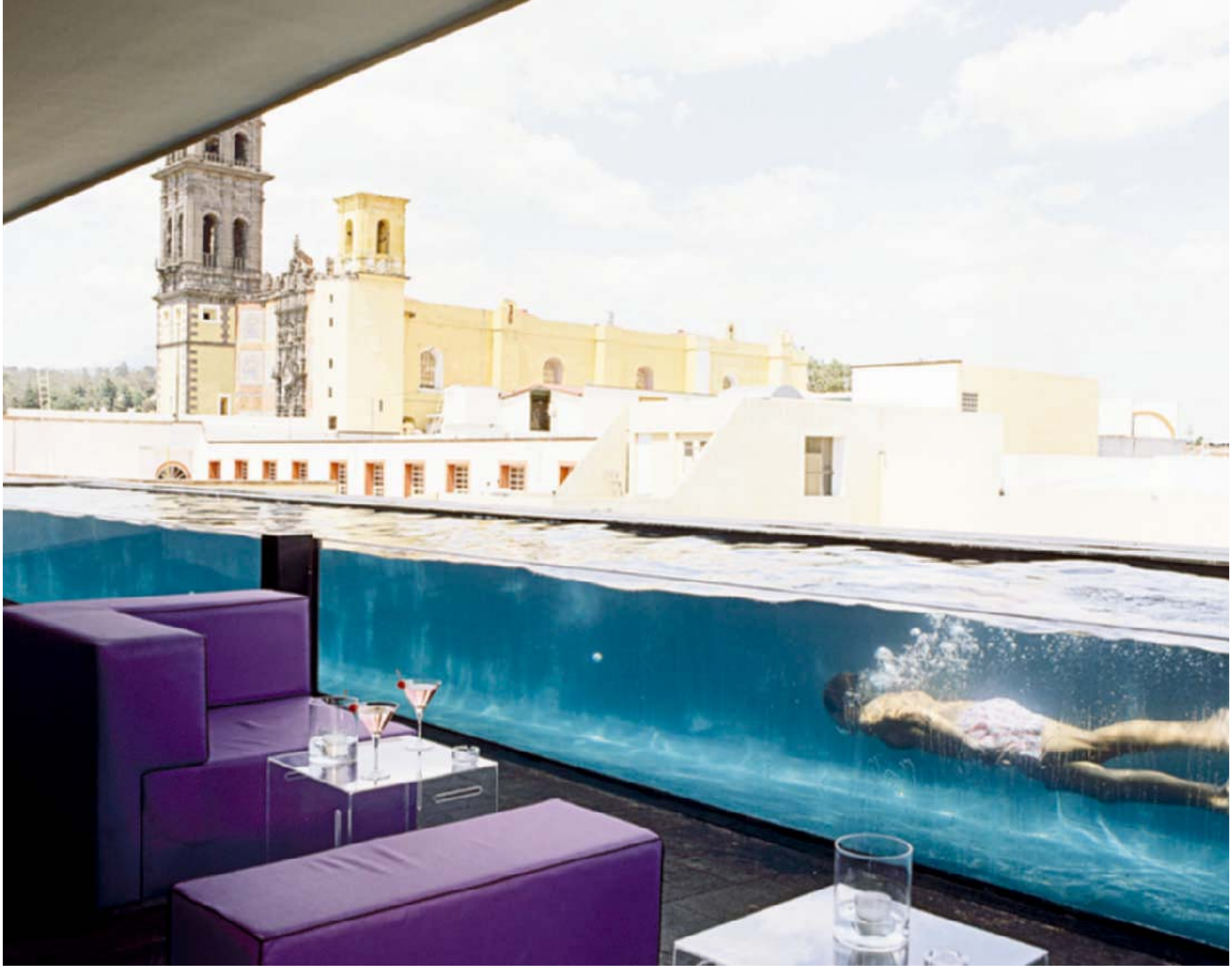


concrete floor slabs, and beams of concrete and steel. In order to incorporate historical elements into the whole, Legorreta + Legorreta salvaged and reused the factory's original materials. The architects recycled the timber from the original structure's beams for the thick wood piers separating the lobby/patio from the more enclosed dining room. Additionally, end-grain blocks cut from the timber beams reappear as flooring. In the bedrooms, one often finds the floors surfaced with specially made ceramic tile reminiscent of the historic Talavera ceramic that sheathes much of the local architecture, and a buttery onyx, indigenous to the area, clads the stalls of the showers and toilets. The combination of old, historic materials with glass window walls set within stainless-steel frames or glass-enclosed balconies offers a constant reminder of the manner in which the architects pay attention to current-day technology.

Commentary

Those expecting the radiant, saturated colors for which Legorreta is known are in for a surprise. The hotel's overall color scheme is basic black and white with a deep purple for furnishings. However, owing to the palimpsest of old, weather-beaten walls and the rich amber hues of the wood and onyx, not to mention the glimpses of trees and planting available through various apertures, the hotel exudes a plush ambience.

Admirers of the Camino Real will still find much evidence of Legorreta's volumetric play of space and light in this newer, smaller caravansary. Yet the intersection with history in the traces that have been left by the purification plant and incorporated into the hotel design give it a gently layered dimension. In an essay, "Hapticity and Time: Notes on Fragile Architecture," Juhani Pallasmaa, the Finnish architect and theorist, wrote that the best architecture "does not struggle against time; it reifies the course of time and makes it acceptable." And so with La Purificadora. ■



On the roof, a 95-foot-long outdoor pool edges the bar and the lounge (above). Open-riser stairs with glass treads leading to the third level (left) end with the glass floor of the rooftop lounge. The typically 388-square-foot guest rooms are subdivided by glass-enclosed closets (right). Floors are covered in a Talavera tile.

Two: W DALLAS VICTORY HOTEL & RESIDENCES

Dallas, Texas

HKS signals the Victory Park development in Dallas with a shimmering, 33-story hotel and condominium tower.

By David Dillon

Architect: *HKS—Nunzio De Santis, AIA, Eddie Abeyta, AIA, Brad Schrader, AIA; Karen Yeoman, design team*
Clients: *Hillwood Development; Gatewood Capital; Starwood Hotels & Resorts Worldwide*
Consultants: *Shopworks (hotel interiors); Bentel & Bentel (interiors for Craft restaurant)*
Engineers: *Brockette Davis Drake (structural); James Johnston & Associates (mechanical); JMEG (electrical); Halff Associates (civil)*

Size: *810,000 gross square feet*
Cost: *$70 million*
Completion date: *May 2006*

Sources
Masonry: *Leudders Limestone*
Metal-and-glass curtain wall, windows, entrance doors: *Kawneer*
Exterior insulation finish systems: *Arkansas Precast*
Glass: *Viracon*
Acoustical ceilings: *Celotex Gridstone; USG*
Demountable partitions: *Kwik Wall*
Resilient flooring: *Armstrong*
Plumbing: *Kohler*
Upholstery: *Valley Forge*
Interior ambient lighting: *Scott Lighting*

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Dallas is a city of iconic objects, flashy stunts on the freeway, and a skyline that looks spectacular from a distance but often flops up close. Lots of panache with little connective tissue best describes the results.

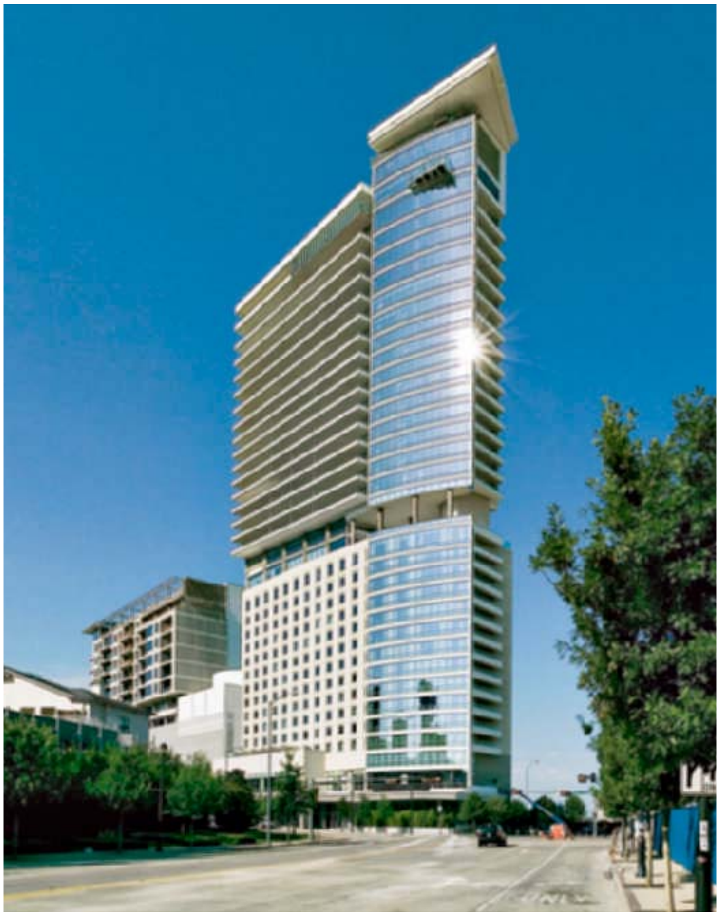
Program

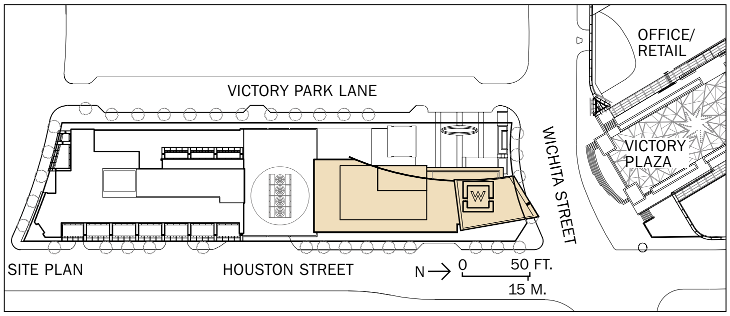
The W Dallas Victory Hotel & Residences tower is trying to change that. It is an object both for the skyline and the freeway, yet unlike many of its competitors, it is also a smart urban building that frames streets, squares, parks, and other public spaces while visually connecting the massive Victory Park development—93 acres and a $3 billion budget—back to downtown.

Solution

The W Dallas tower is effectively two concrete-framed buildings joined at the 16th floor by an outdoor pool and spa, a kind of floating Roman bath offering panoramic views of the city. The base is a 252-room W Hotel, with a Texas limestone facade and a grid of square, businesslike windows. The tower, containing 63, six-figure condos, is a lighter, more transparent blend of steel and glass topped by the superluxe Ghostbar and a helicopter pad for Victory's developer Ross Perot, Jr.

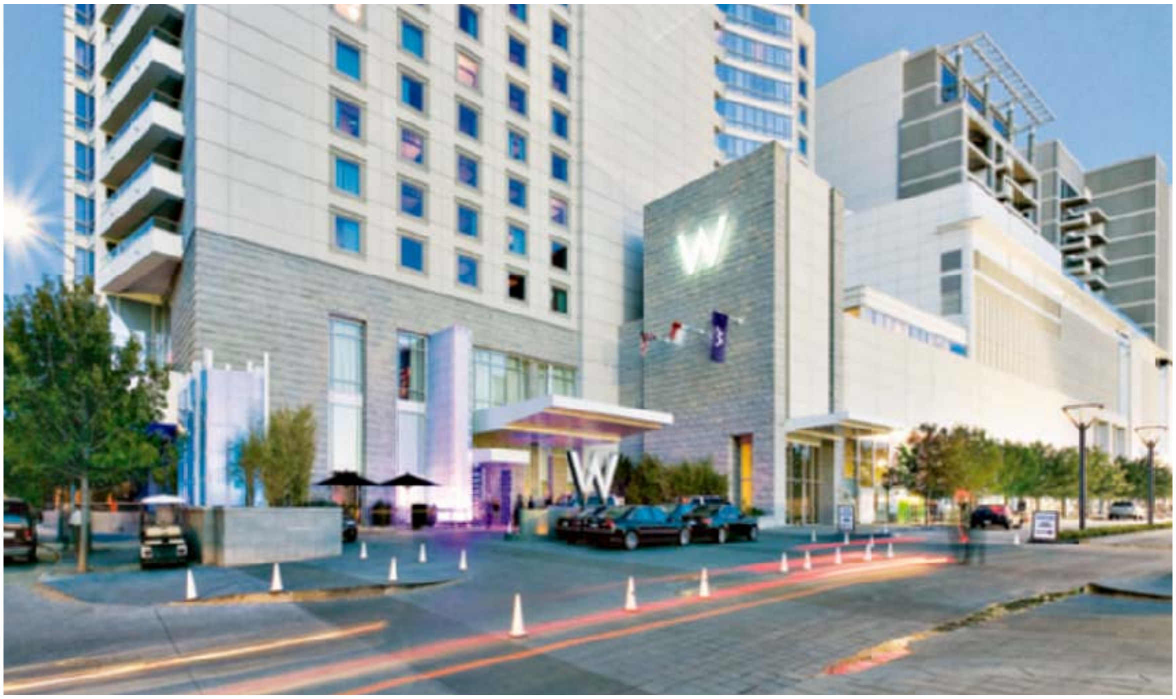
The watery void on the 16th floor liberates the tower from its base and gives it a freewheeling independence. The curving west facade responds to a bend in the street and



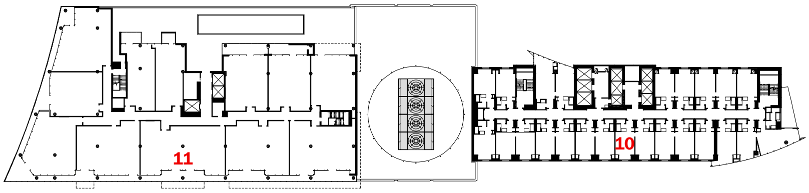


PHOTOGRAPHY: © BLAKE MARVIN

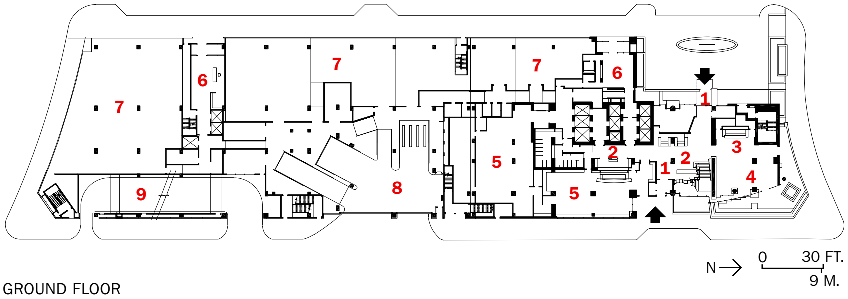
The W hotel and condominium tower (opposite) anchors the southern edge of Victory Plaza (site plan, opposite, bottom). The hotel rooms are grouped in the lower portion of the tower, above the entrance (right), with the condominiums located in the glazed portions above. Bentel & Bentel designed the Craft restaurant (below) to intentionally play off the tower's concrete structure, and softened surfaces with bleached oak.



1. *Hotel entrance*
2. *Front desk*
3. *Bar*
4. *Lounge*
5. *Restaurant*
6. *Condominium lobby*
7. *Retail*
8. *Loading dock*
9. *Parking garage entrance*
10. *Hotel guest rooms*
11. *Condominium units*



TYPICAL FLOOR



GROUND FLOOR

The architects reduced the sense of monotony of walking down a long hotel corridor by framing the various entrances to the guest rooms with light bands, teak trim, and a blue-gray color scheme.

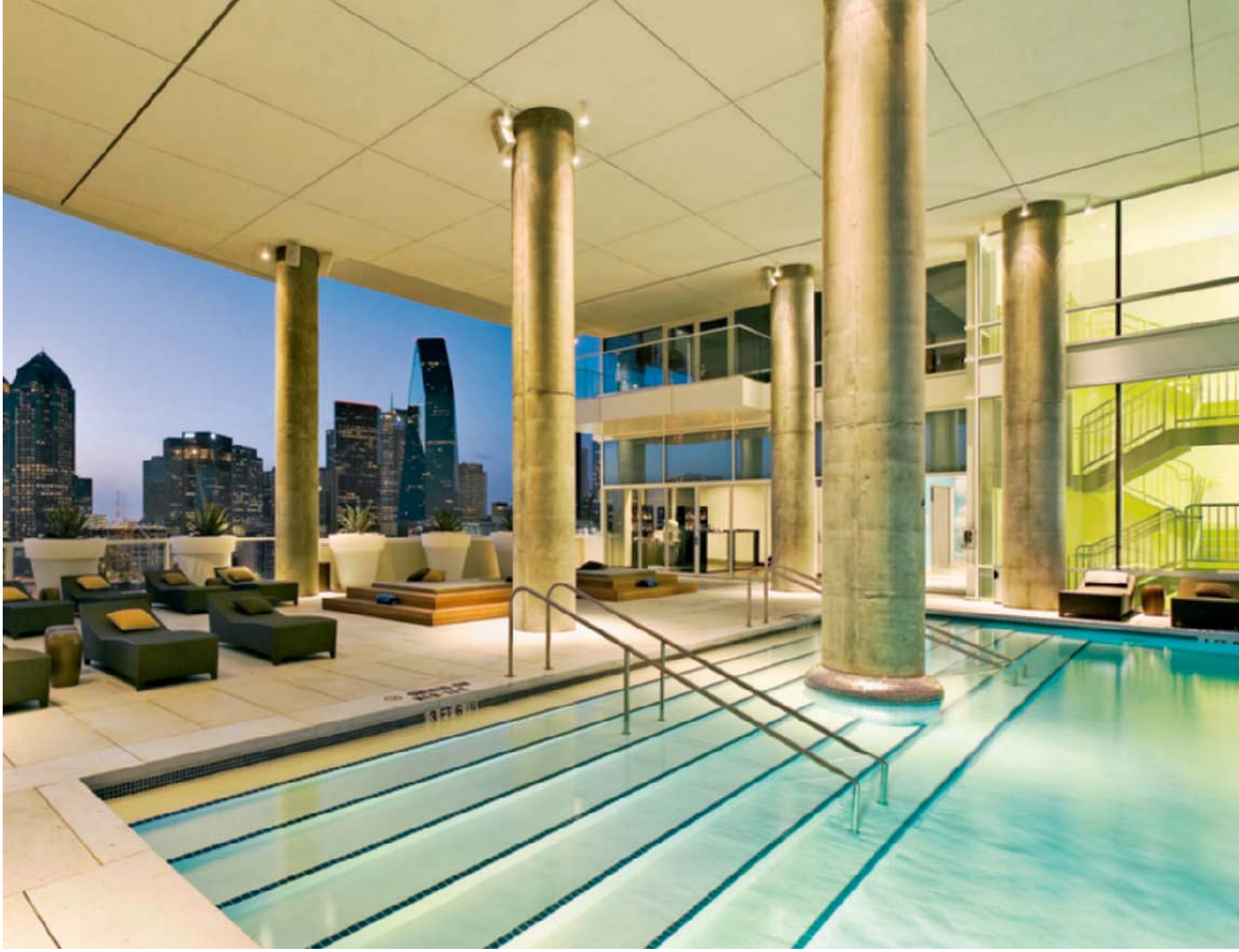
the sweep of a nearby interstate, while the more linear east wall extends the geometry of downtown skyscrapers, like an exclamation point at the end of a long architectural sentence. The two facades come to a point at Victory Plaza, a vast outdoor room trimmed with pulsating neon and sliding digital screens flashing scores, headlines, and ads. It is the closest downtown Dallas has come to an urban space, even though it's jumping mostly after Dallas Stars and Mavericks games.

Commentary

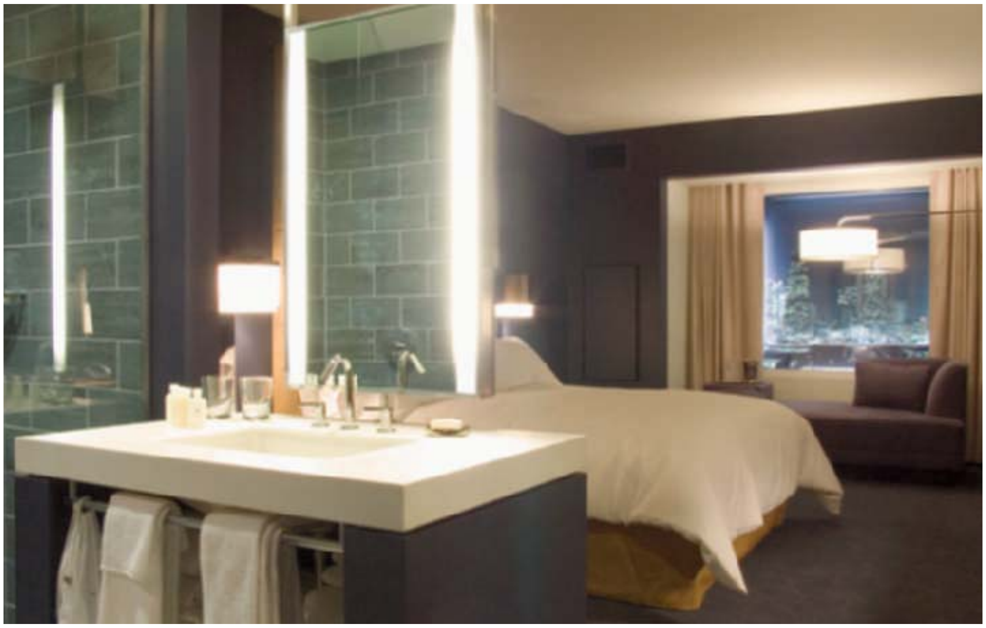
The W Dallas tower is the best building in years from HKS Architects, known mainly for hospitals and sports facilities and turning out production drawings for star architects. But the interiors, mostly by Shopworks, are an unresolved mix of West Coast cool and self-conscious Texana. The Living Room, a dramatic lounge off the lobby, is welcoming, but the rest of the lobby is a hodgepodge of forms and materials. The guest rooms, with their pale teak doors and ubiquitous deep-purple surfaces, are luxuriously dull; corridors and elevator lobbies very dark. The best interior by far is the Craft restaurant by Bentel & Bentel, who also designed other Craft enterprises in New York [RECORD, November 2002, page 245]. In Dallas, Craft's decor is refined and supremely self-assured, with fine materials—oak, brass, leather—used cleanly and honestly, rather than for distracting special effects.

The whole development began in 2001 with a hunkering Art Deco arena (the American Airlines Center) in a brownfield, and then evolved rapidly, and surprisingly, into a collection of contemporary hotels, shops, apartments, and office buildings, including projects by Kohn Pedersen Fox and Philippe Starck. Ross Perot, Jr., of Hillwood Development, sought to create a "city within a city." Obviously, he's on the right track with the density and urbanity of this signature tower. ■

David Dillon writes on architecture in Dallas and teaches at Amherst's School of Architecture in Massachusetts.



Both hotel guests and condominium residents share the 16th-floor infinity pool. Overlooking downtown Dallas, it is sheltered by a dramatic, 25-foot-high ceiling. Efficiently planned guest rooms (right) blur distinctions between public and private areas, notably where the sink is treated as a room divider.



Three: ADAM & EVE HOTEL

Belek, Antalya, Turkey

Eren Talu heralds the charms of Turkey's Mediterranean coast with a Minimalist pleasure palace built on a grand scale.

By Leslie Yudell

Architect: *Erentalu—Eren Talu, principal; Asli Bigat, Tugba Sipahioglu, Meric Guran, Burcu Timocin, project team*
Owner: *Kayi Group*
Consultants: *Eng N Kember (mechanical); BST Engineering (structural)*

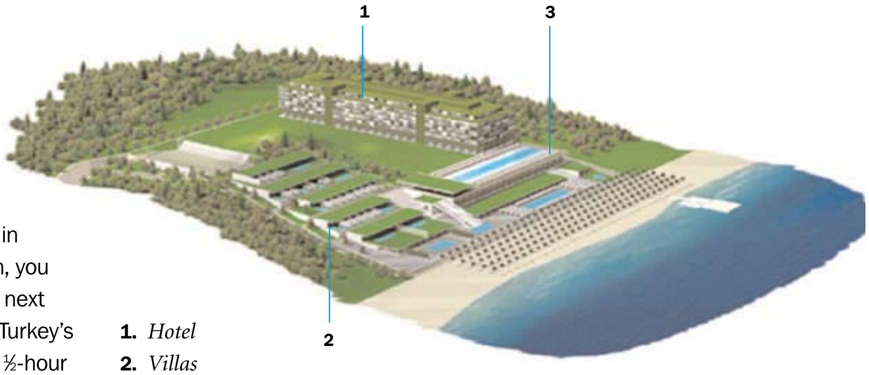
Size: *1,291,669 gross square feet*
Cost: *$150 million*
Completion date: *December 2006*

Sources
Exterior cladding: *Knauf (aquapanel); Kuk (imitation boxwood)*
Windows: *Akel Aluminyum (aluminum)*
Glazing: *Sisecam (mirrors); Genpas (Profilit glass panels)*
Doors: *Akel Aluminyum; Mooddoor; Matriks Building Control Systems*
Hardware: *Ar Ticaret (locksets)*
Interior finishes: *HunterDouglas–Luxalon, Ibrisim Construction (metal-grid-cell ceiling system); Aspen A.S. (partition walls); Okyanus Group (white polyurethane floors and coverings)*
Furnishings: *Kartell-Mood (barstools, chairs); Gardiablasco (outdoor furniture)*
Lighting: *Damla-Vetas Electric & Lighting (RGB line LED); Telesine (atrium truss lighting)*

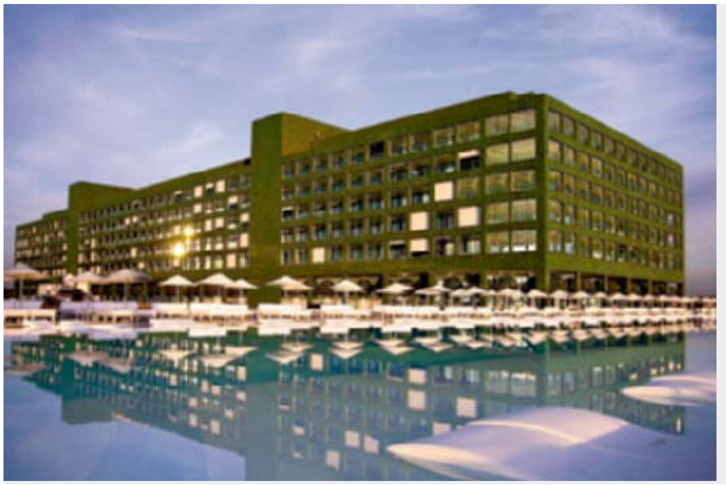
ONLINE: Rate this project and access additional sources at **architecturalrecord.com/bts/**.

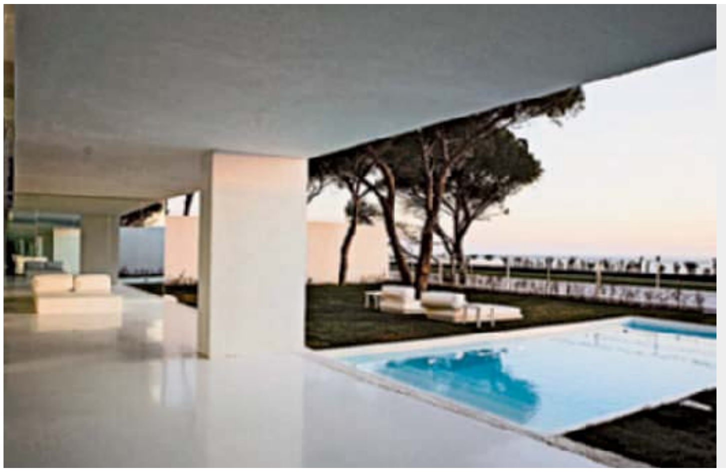
"If you've a date in Constantinople," as the old song goes, "she'll be waiting in Istanbul." These days, though, you would do better to catch the next 1¼-hour flight to Antalya, on Turkey's Mediterranean coast, take a ½-hour cab ride to nearby Belek, and check in at the Adam & Eve Hotel, designed by Turkish architect Eren Talu as "the world's sexiest." Its claims also include the world's longest swimming pool (341 feet, twice Olympic size), largest lounge (108,000 square feet), and longest bar (315 feet). With a Garden of Eden theme dedicated to sybaritic delights on a grand scale, it should make for a memorable tryst. But your date will need a cell phone to locate you in the pleasure dome's vast premises.

Adam & Eve is situated on 25 acres of landscaped grounds in a pine forest facing the Mediterranean, with the Taurus Mountains in the distance. It is the third of Talu's boutique hotels built in the fast-growing resort area of southwestern Turkey. It follows the Hillside Su Hotel, which opened in Antalya in 2003, and the EV Turkbuku, built in Bodrum—the "St. Tropez of Turkey"—on the country's Aegean coast, in 2004. All three properties share the architect's signature hotel style: a sleek, Minimal vocabulary of stark white concrete relieved by floor-to-ceiling glazing, with interiors sheathed in mirrors that reflect continually changing colored lights.



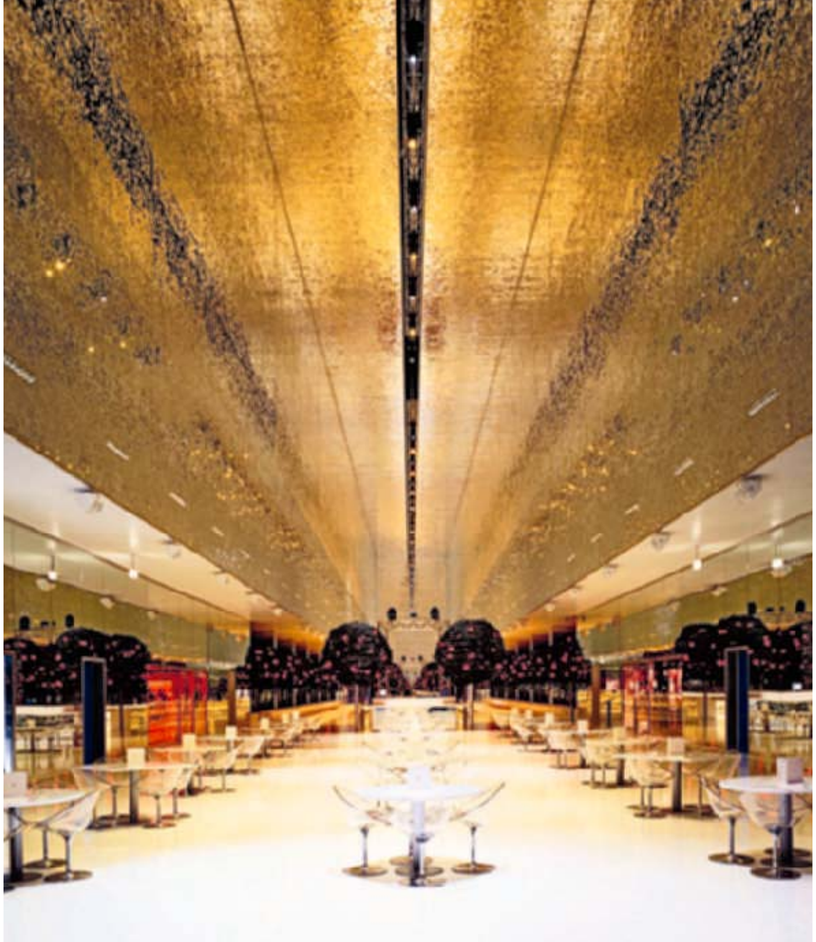
1. *Hotel*
2. *Villas*
3. *Outdoor pools*





PHOTOGRAPHY: COURTESY ADAM & EVE HOTEL

The main, reinforced-concrete building (opposite, center) is sheathed in artificial moss to blend in with the surrounding pine forest. Villas with private gardens and pools (opposite, bottom) overlook the sea. The 574-foot-long ceiling of the Atrium (below and right), the hotel's hub, is covered in tiny, mirrored tiles that sparkle in the glow of changing colored lights. Mirrors line the indoor pool (bottom), a serene space that reflects the sky by day and lush, tinted illumination at night.



Guest rooms are equipped with hot tubs, jacuzzis, steam and massage showers, and programs for color, sound, and light therapy. There are also suites with expanded spa facilities (below), including private saunas, Turkish baths, and treatment rooms.

Program

Adam & Eve marries Modernist design and massive scale in a luxurious, self-contained complex comprising a six-story rectangular block with additional private villas on a hillside above the sea. It is positioned as an upscale resort destination in Antalya province, an area once legendary for its beauty—its coast now called the "Turkish Riviera"—but only recently attracting high-end development. The hotel is the first in a chain planned by its owners, the Kayi Group, which is based in the provincial capital and has been promoting the region's tourism for 20 years. The project's grandiosity and its architect's high-design profile, coupled with novel effects, have been deployed to distinguish it from more conventional hotels and attract an affluent, international clientele to the area.

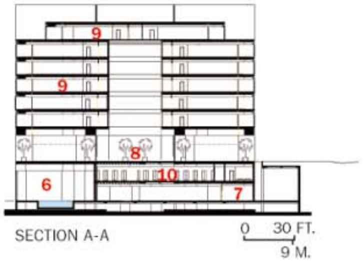
Solution

The 497-room complex maximizes its Minimalism with outsize accommodations and a huge array of amenities. The standard, 689-square-foot rooms occupying the main building each include a 172-square-foot terrace. Every room is equipped with concealed music and lighting systems controlled by guests to create color-and-sound environments to fit their mood. There are also 24 villas on the grounds that range from 1,378 to 6,889 square feet and have private gardens and pools. In addition, there is a 53,820-square-foot spa, seven pools, and state-of-the-art conference and meeting facilities.

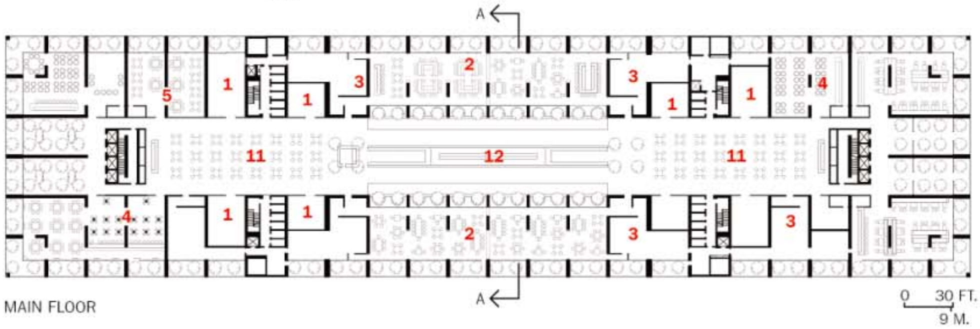
Whereas Versailles has only one Hall of Mirrors, Adam & Eve is lined with them, reflecting sea and land by day and your every move around the clock. The ceiling of the hotel's 108,000-square-foot Atrium, its hub, is covered with 2-by-2-inch, hand-laid mirrored tiles that sparkle with an otherworldly splendor rivaling the Hagia Sophia as the space is bathed in dazzling colored light. Off the Atrium, you can browse in eight shops, relax in any of several lounges, and have drinks in a choice of four bars before dining in one of the nine restaurants that surround the great hall. Later you can party all night in the two-story disco.

Commentary

After an aggressive promotional campaign prior to its opening last year, the hotel has received mixed reviews. Some visitors have found its vaunted impeccable service wanting; others have been put off by the stark, unvaried decor—one reviewer lamenting, "Bring back chintz." The wall-to-wall mirrors have made others uncomfortable, and guests may be surprised that the Trees of Life decorating the place aren't alive. More notably, Talu's bloated Minimalism, accessorized with light shows and glitter, its catchphrase "more is more," seems inspired by Morris Lapidus rather than Mies van der Rohe. It will be interesting to see if this unlikely, oxymoronic union will bear fruit, drawing vacationers to Turkey's Mediterranean coast, or even serving as a model for resort developments elsewhere. ■



1. *Retail shop*
2. *Restaurant*
3. *Kitchen*
4. *Bar*
5. *Card games*
6. *Indoor pool*
7. *Spa*
8. *Atrium*
9. *Guest room*
10. *Dressing room*
11. *Atrium lounge*
12. *Atrium bar*



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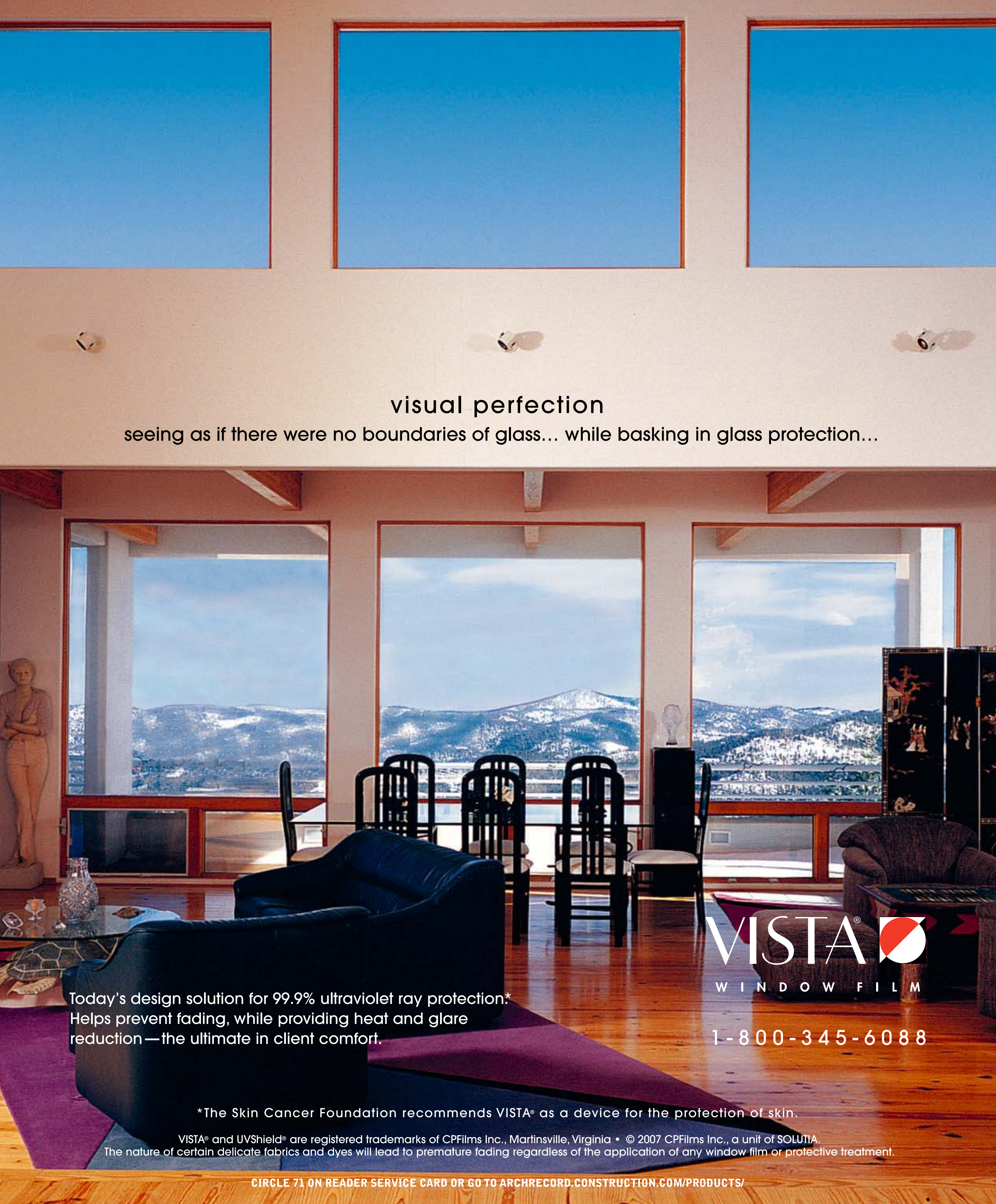

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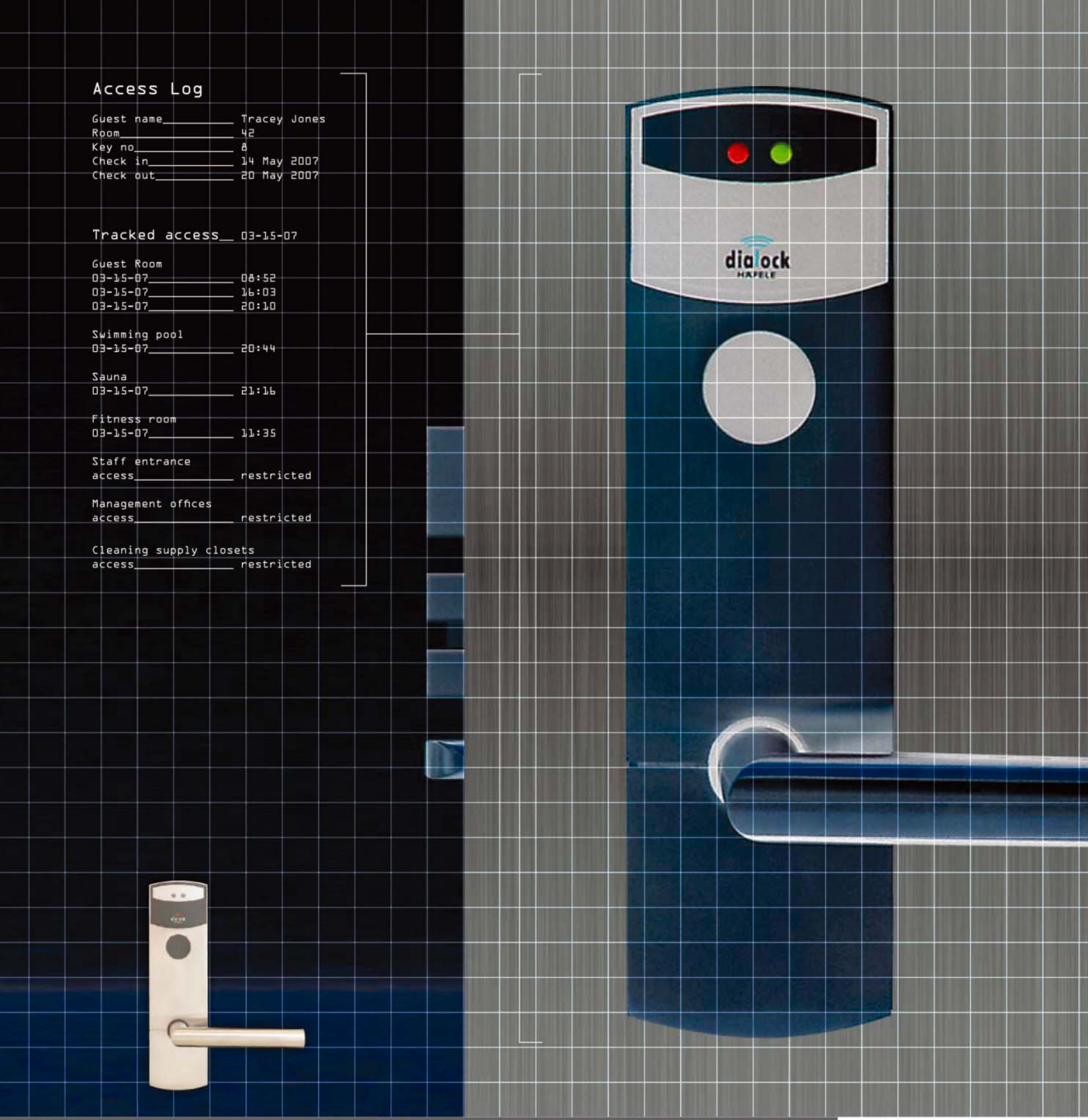

Access Log

Guest name__________ Tracey Jones
Room________________ 42
Key no______________ 8
Check in____________ 14 May 2007
Check out___________ 20 May 2007

Tracked access__ 03-15-07

Guest Room
03-15-07____________ 08:52
03-15-07____________ 16:03
03-15-07____________ 20:10

Swimming pool
03-15-07____________ 20:44

Sauna
03-15-07____________ 21:16

Fitness room
03-15-07____________ 11:35

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Management offices
access______________ restricted

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Safety and Security Without the Fortress Look

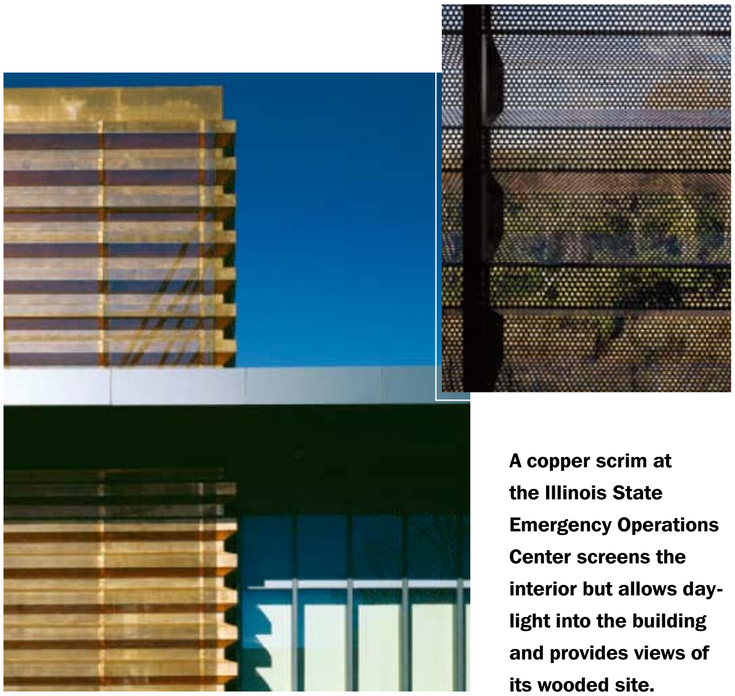
DESIGNERS OF PUBLIC-SECTOR EMERGENCY-RESPONSE BUILDINGS ESCHEW THE BUNKER IMAGE AND INCORPORATE TRANSPARENCY, SUSTAINABILITY, AND STATE-OF-THE-ART TECHNOLOGY

By Joann Gonchar, AIA

By the morning rush hour on August 8, personnel from New York City's Office of Emergency Management (OEM) had already shifted into high gear. Just as New Yorkers were preparing to begin their commutes, an intense summer storm dumped 3 inches of rain on the city in an hour, flooding and crippling the subway system. OEM officials were closely monitoring public transit system conditions and at the same time were coordinating the agencies sent to assess damage in the Brooklyn neighborhood of Bay Ridge, where heavy winds, later determined to be a tornado, toppled trees and tore roofs off houses. And they were keeping track of the weather forecast, readying cooling centers around the city to help residents cope with expected temperatures in the 90s and high humidity.

The nerve center of this activity was the OEM's new headquarters in downtown Brooklyn. Completed in the fall of 2006, it is just one of several of the generation of public-sector emergency-response buildings designed and built in the U.S. after the terrorist attacks of September 11, 2001. It is the agency's first permanent home since its former headquarters, at Seven World Trade Center, was destroyed in those attacks.

Though a variety of configurations are possible, emergency-response centers like that in New York City generally have similar programs. They include a large room that is dormant most of the time, but activated during emergencies. The room, known sometimes as the emergency operations center or the incident-response center, provides workstations for representatives of federal, state, and city agencies. Usually adjoining this often double-height space is a smaller meeting room for high-ranking officials to gather and develop a coordinated response.



A copper scrim at the Illinois State Emergency Operations Center screens the interior but allows daylight into the building and provides views of its wooded site.

PHOTOGRAPHY: © BARBARA KARANT/KARANT ASSOCIATES

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ *AIA Continuing Education article. To earn one AIA learning unit, including one hour of health safety welfare credit, turn to page 166 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue can be found beginning on page 173.*

LEARNING OBJECTIVES

After reading this article, you should be able to:

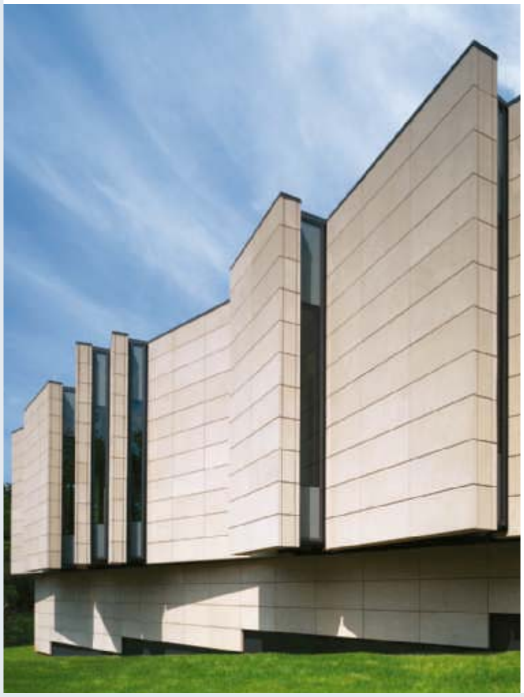
1. *Describe the design requirements for emergency-response centers.*
2. *Explain the typical program of an emergency-response center.*
3. *Identify redundancies needed in mission-critical facilities.*

For this story and more continuing education, as well as links to sources, white papers, and products, go to **architecturalrecord.com/tech/**.

A key element of emergency-service buildings is one room—called the "watch command" at New York City's OEM—staffed 24-hours a day. From here, personnel continuously monitor information sources such as news broadcasts, weather data, 911 calls, and police and fire dispatch systems. Emergency-response centers also generally include facilities such as press rooms, conference rooms, kitchens, and sometimes sleeping areas. And they also must provide office space for full-time staff engaged in activities such as preparing evacuation plans, developing responses to specific hazards, and educating the public. In New York, about 150 people are focused on such efforts. "We are more like a think tank than a heavy-duty emergency-response organization," says Rachel Dickinson, the agency's deputy commissioner of administration.

For New York City's OEM, officials chose a downtown site with an existing low-rise office building built in 1954. The location was attractive because of its easy access to public transportation and City Hall in Lower Manhattan, within walking distance just over the Brooklyn Bridge. In addition, the existing building, at the edge of a city park, had no immediately adjacent structures—a rarity in such a dense urban environment. "The building had the advantage of being stand-alone and securable," says Henry Jackson, OEM deputy commissioner.

As part of the $50 million gut renovation and addition, contractors demolished interior partitions, finishes, and the exterior enclosure.



The choice of a rain-screen facade for the Illinois SEOC (far left and above two) provided a weatherproof envelope early in the construction process so that interior fitout could proceed. Although the limestone-clad entry elevation (above two) seems impervious, the lobby beyond is filled with daylight (near left).

Using the existing reinforced-concrete structure, they built a state-of-the-art facility that incorporates features including redundancies in its mechanical and telecommunications systems, enhanced blast resistance, perimeter security, and monitoring and filtration of outside air, intended to protect it from a variety of threats, both natural and man-made.

Despite these precautions, New York City's OEM does not look like a fortress. In keeping with the agency's public mission, the architect, Swanke Hayden Connell, worked to endow the building with a civic presence. "The OEM is not a bunker or a container for technology," says Joseph Aliotta, Swanke Hayden Connell principal.

Aliotta and his team relocated the core of the building from the center of the floor plan to the main facade. The new configuration allowed creation of a large clear-span space for the third-floor emergency-operations center and a loftlike open office area below. Within this new core, the architects carved out terraces that help screen generous expanses of glass. By using the depth of the core to create a screen, and by cladding the building with a combination of zinc panels and limestone—the facade material of a federal courthouse at the southern edge of the park and a group of other nearby civic building—the architects provide transparency and acknowledge the context.

Information-technology overload

Emergency-response facilities require a great deal of information technology. Shoehorning this infrastructure into the framework of an existing structure, as the design team was required to do in New York, often calls for inventive solutions. Just some of the services in the watch-command room, for example, are satellite, broadband, cable, radio, wireless, and land lines. A constrained floor-to-floor height of only 12 feet precluded also making the raised floor depth large enough to house an under-floor

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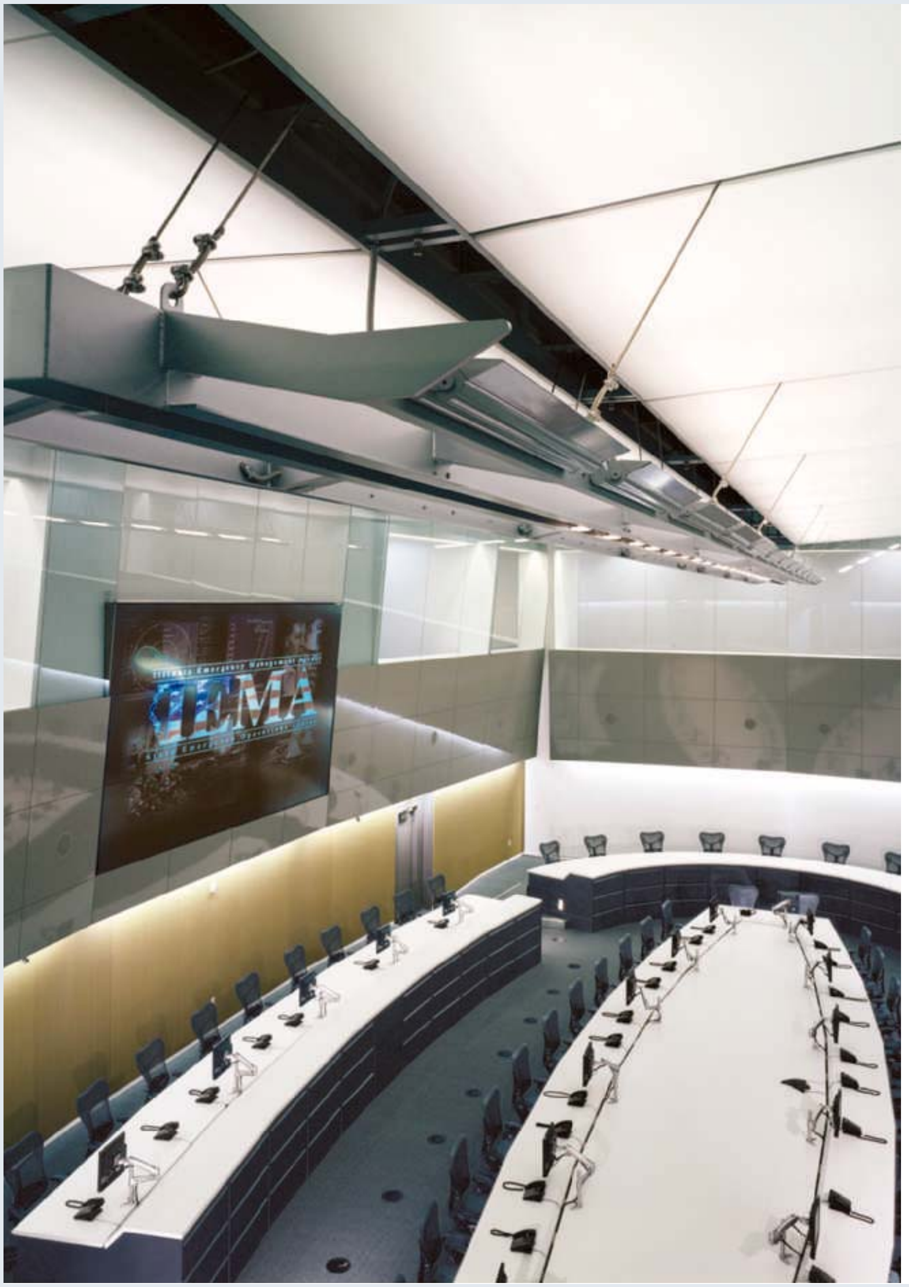
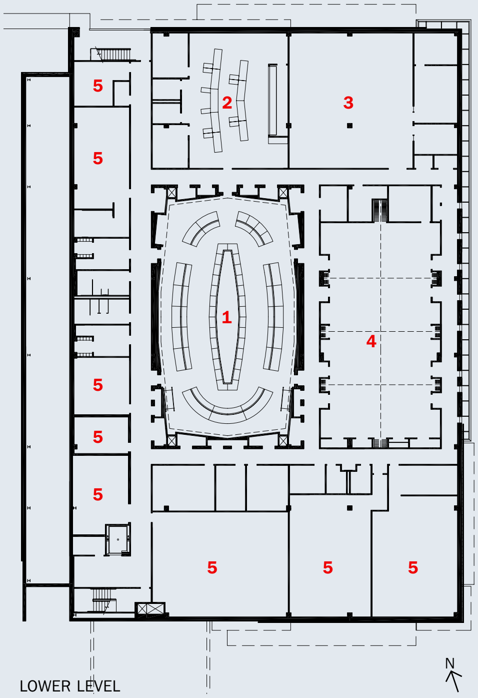


During an emergency, Illinois decision makers gather in the SEOC incident-response center. The two-story room contains a range of telecommunications technology to help them track events throughout the state.

1. *Incident-response center*
2. *Communications center*
3. *Data center*
4. *Conference center*
5. *Support and infrastructure*



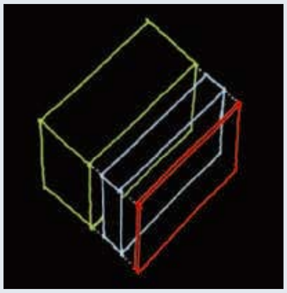
air system. Instead, contractors threaded air-handling units and ducts through open-web trusses supporting the roof. And in order to create the ideal sight lines from the room's four workstations to wall-mounted rear projection units, they eliminated the raised floor in half of the room, explains Steven Emspak, Shen Milsom Wilke principal, the project's communications, multimedia, and acoustical consultant.

As designers had done in New York City, the architects DeStefano and Partners created a veiled facade for their Illinois State Emergency Operations Center (SEOC) in Springfield, completed in 2005. Partly motivated by an aggressive schedule that allowed only 19 months for design and construction of the 50,000-square-foot facility, DeStefano enclosed the two-story, steel-framed structure with a rain-screen system, providing a weatherproof envelope early in the construction process so that interior fitout could proceed. Contractors installed the finish cladding of limestone panels and perforated copper near the end of the construction process.

This facade strategy also screened the interior from view while allowing daylight into the building. For example, the "folded" entry elevation, clad in limestone, presents a seemingly impervious facade from the street. But hidden between the folds are windows that provide plenty of daylight for the reception area. Similarly, the copper scrim protects office windows, but allows daylight to filter through its perforations. "We tried to turn the project requirements into an architectural opportunity," says Avi Lothan, DeStefano design partner.

PROTECTING A BUILDING FROM NATURAL DISASTERS CAN BE AS CHALLENGING AS SAFEGUARDING IT FROM TERRORISTS.

The veiled approach not only addressed scheduling and security concerns, but also provided protection from natural disasters. The impact



Designers of New York City's OEM worked with the structure of an existing building, moving its core from the center to the south elevation (above left). They used the new core as a screen (bottom left) by carving out terraces and the lobby (middle left). The configuration allowed for a large, clear-span space for the emergency operations center (right) with its immediately adjacent situation room (above right).

load of a tree thrown into a window during a hurricane or tornado can be more difficult to design for than terrorist activity, according to Lothan. However, the screens act as a "sacrificial" layer and safeguard the glazing from such loads, he says. The copper, also used to create an enclosure for rooftop equipment, has the added benefit of shielding electromagnetic interference that could disrupt telecommunications, points out Michael Kuppinger, senior vice president of ESD, Chicago, the project's mechanical and technology consultant.

In case a natural disaster or terrorist activity compromises municipal services providing power, water, or sewage disposal, the SEOC, like most mission-critical facilities, incorporates many redundancies. It has a diesel generator and storage for potable water and mechanical system make-up water, allowing the building to function independently for up to three days, even in a "doomsday scenario," say Lothan.

Natural disasters were also a key concern for designers of the Los Angeles Emergency Operations Center (LA EOC), a county facility now under construction at the edge of Little Tokyo. "The building must remain operational after a major event," says Ernest Cirangle, AIA, HOK design principal. "And the most likely event here is an earthquake." To ensure that the LA EOC can withstand a large magnitude temblor, the 82,000-square-foot, two-story building is base-isolated and surrounded by a 4-foot-wide moat. Complicating the design of the friction-pendulum seismic-isolation system is an immediately adjacent fixed-base fire station that shares dispatch facilities with the EOC. The two buildings are connected on two levels with a corridor, but are otherwise separated by an 11-foot gap.

The EOC's structural integrity after a quake was not the design team's only worry. Because the building's "lifelines" must also remain intact, its power, gas, and water supply all have flexible connections to accommodate ground motion, says Cirangle.

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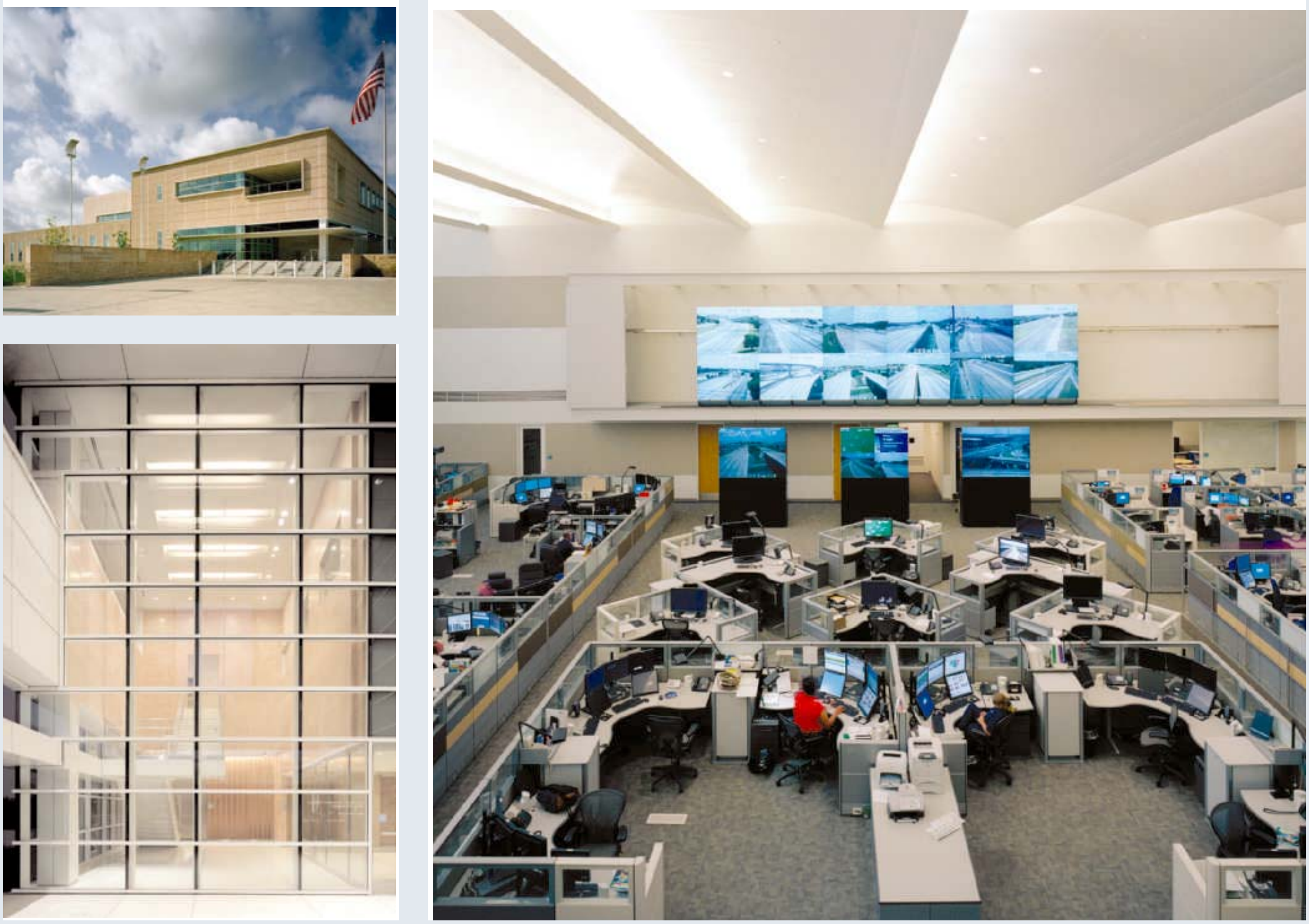

The design for Austin's emergency and communications center (this page) responds to an analysis of possible exposure to terrorism and related threats, but its lobby (above left) is transparent and welcoming. Workstations in the operations and dispatch center (above) allow individual environmental control.

Designed to evolve

Telecommunications and mechanical consultants stress the importance of careful planning in order to achieve designs that provide flexibility. Features such as raised floors and spare conduit and cabling in the right locations are key to allowing alterations and upgrades as technology inevitably matures and agency needs change. "A crystal ball also helps," jokes Shen Milsom Wilke's Emspak.

CAREFUL PLANNING IS THE KEY TO FLEXIBLE FACILITIES THAT ACCOMMODATE CHANGE AS TECHNOLOGY MATURES.

One development that Illinois SEOC officials see in their crystal ball is an eventual tripling of data-center staff. This anticipated growth not only has space-planning and data-infrastructure implications, but electrical and mechanical ramifications, as well, points out Thomas Condon, a senior consultant with Chicago-based SDI, the project's systems-integration consultant. "The density of computing power is directly related to heat generation," he says.

In order to mitigate the increased heat production, the data center will eventually require additional computer-room air-conditioning units, or CRACs, says ESD's Kuppinger. The piping and electrical service sufficient to handle these equipment additions are already in place, allowing CRAC installation without complicated or costly changes to the mechanical and electrical infrastructure, he explains.

The LEEDing edge

Like building owners throughout the country, emergency-response agencies are increasingly aware of the effect that the construction and operation of their facilities has on the environment and are taking steps to

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The Los Angeles EOC will seek LEED certification after completion in 2008.

make their buildings more sustainable. One example is Austin, Texas's Combined Transportation, Emergency & Communications Center, which earned LEED Silver certification from the U.S. Green Building Council (USGBC) after its completion in 2003, and is designed to use 20 percent less energy than a building that complies with code. The center's exterior envelope incorporates shading devices and high-performance glazing. The interior paints and sealants emit low levels of volatile organic compounds. And each workstation has a personal environmental-control system that includes a sound-masking device and allows occupants to change air flow and temperature. Many of these strategies not only improve building performance, but also enhance indoor air quality and acoustics, provide access to daylight and views, and generally create a more comfortable environment for employees, who sometimes work long shifts and are responsible for making difficult decisions in stressful situations, points out DMJM's Jose Palacios, the project's design principal.

GREEN STRATEGIES IMPROVE CONDITIONS FOR THOSE MAKING CRITICAL DECISIONS IN STRESSFUL SITUATIONS.

In Los Angeles, county officials plan to pursue LEED certification for the the new OEM building after its completion next year. And this summer, the facility in Brooklyn became the first New York City–owned building to earn LEED certification when it was awarded a Silver rating. The agency decided to pursue certification even before passage of Local Law 86, which now requires that new city facilities adhere to USGBC standards. A green building is a good fit for the OEM, points out Dickinson, "since so much of our work revolves around issues that affect the environment." ■

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- ◆ **Read the article "Safety and Security Without the Fortress Look" using the learning objectives provided.**
- ◆ **Complete the questions below, then fill in your answers on the next page.**
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QUESTIONS

1. During which situation would an emergency-operations center activate?
  - **a.** tornado
  - **b.** earthquake
  - **c.** terrorist act
  - **d.** all of the above

2. Emergency-response centers generally include all except which?
  - **a.** a press room
  - **b.** offices for full-time staff
  - **c.** urgent-medical-care facilities
  - **d.** a kitchen

3. The purpose of the incident-response-center space is to provide which?
  - **a.** a staging area for emergency supplies
  - **b.** workstations for representatives of federal, state, and city agencies
  - **c.** temporary shelter for victims of an emergency
  - **d.** meal preparation for emergency responders

4. The existing building chosen as the site of New York City's OEM was selected for which reason?
  - **a.** it had an open floor plan
  - **b.** it was in Lower Manhattan
  - **c.** it was stand-alone and securable
  - **d.** it had a state-of-the-art telecommunications system

5. Moving the core in the New York City building allowed for all except which?
  - **a.** a large, clear span for the emergency-operations-center space
  - **b.** compliance with the Americans with Disabilities Act
  - **c.** an open, loftlike office area
  - **d.** creation of a screenlike facade

6. The Illinois SEOC's veiled facade provided all except which?
  - **a.** blocking visibility into the interior
  - **b.** daylight in the building
  - **c.** protection from natural disasters
  - **d.** added space for telecommunications infrastructure

7. Which is not a feature of the seismic design of the Los Angeles Emergency Operations Center?
  - **a.** the base of the building is isolated
  - **b.** it shares some facilities with an adjacent, fixed-base fire station
  - **c.** the building's lifelines have rigid connections
  - **d.** a moat surrounds the building

8. Which is not an example of redundancies for mission-critical facilities?
  - **a.** a diesel generator
  - **b.** storage for potable water
  - **c.** storage for mechanical system make-up water
  - **d.** all of the above

9. Which would be the ramification of an increase in staff?
  - **a.** the need for more electrical service
  - **b.** the need for more computing power
  - **c.** the need for more mechanical equipment
  - **d.** all of the above

10. Examples of the sustainable features of Austin's Combined Transportation, Emergency & Communications Center include all except which?
  - **a.** a photovoltaic array
  - **b.** shading devices
  - **c.** high-performance glazing
  - **d.** sealants with low-volatile organic compounds

AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION

Program title: "Safety and Security Without the Fortress Look," Architectural Record (10/07, page 159).

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5.	a	b	c	d	**10.**	a	b	c	d

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Tech Briefs

A cartoonish frivolity of light structure invades Norway with **Snøhetta's Tubaloon,** while three new **sustainable design books** add more voices to the literature of green building

A structural riff in Norway: Snøhetta's Tubaloon band shell

Now hear this. For a giant, cochlear band shell called Tubaloon, which hovered over Norway's annual Kongsberg Jazz Festival this past summer, the designers of Norwegian architecture firm Snøhetta caught an echo from architectural history. Project architect Joshua Teas says his team drew inspiration for Tubaloon from the curving walls and warped twists of the steel-cable-supported Philips Pavilion, which Le Corbusier and Iannis Xenakis created for Brussel's World Expo of 1958.

But to realize the homage, Snøhetta riffed on an innovative engineering concept developed in 2000 by Swiss engineer Mauro Pedretti. Called Tensairity, Pedretti's proprietary technology features long-span beams that minimize strut material by using low-pressure air to prevent compression elements from buckling. The basic Tensairity girder, now produced by Pedretti's Swiss company Airlight, features an air-filled fabric tube connected along the length of a compression element. The tube is then wrapped in two spiraling cables that tie into and strengthen the strut. The effect is a strong strut member with considerably less structural weight and construction time.

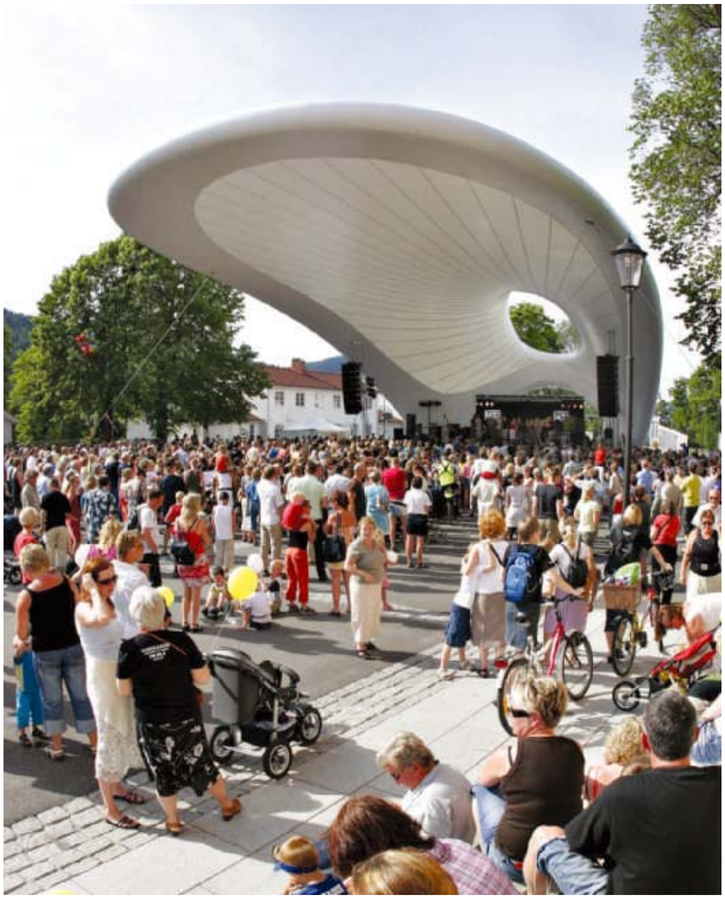
In 2003, Ole Gustavsen, who heads Snøhetta's Oslo office, volunteered his firm's services to design a band shell for the annual jazz festival, which occurs in a square opposite a recently renovated 242-year-old church in Kongsberg. Teas says a design workshop concluded "with an intuitive sketch of what we thought could suit the space and the festival's needs nicely—an expressive air-filled shell that we called 'The Jazz Heart.' "

Snøhetta's architects were acquainted with Tensairity, but had envisioned Tubaloon as entirely inflatable. "At this point, we thought of many more cable stays and support masts than we ultimately ended up with," Teas notes, adding that achieving their desire for effortless buoyancy frustrated them: "It was going to be tough to get a big, saggy balloon to 'poing' up the way we wanted it." Pedretti, who then came to Oslo, promised that Tensairity would eliminate any need for masts.

Snøhetta's Tubaloon features an air-filled, cable-wrapped strut member that can be quickly constructed or disassembled (above and above right). A compressor recharges the strut a few times each day to prevent sagging.

Pedretti's son Andrea engineered the structure. He and Teas adapted the traditional Tensairity girder, substituting a galvanized-steel armature for spiral cables. It is composed of segments with brackets, which the air tubes nestle into. Instead of a by-the-book application of Tensairity, Tubaloon represents "an inflatable, tension-membrane structure in which most of the supporting structure is internalized," Teas explains. The frame mounts to two poured-concrete foundation pads, with four additional connection points for cables and a compressor that maintains air pressure.

In addition to achieving buoyancy without a forest of masts, the hybrid structure yields other benefits. The air tubes stabilize the steel and provide tension for the polyvinylidene difluoride-coated PVC membrane that drapes over the skeleton, while the segmented steel frame assembles in a matter of days, otherwise storing in simple containers until next year's three-week-long jazz festival. By day, it's a visual cymbal crash in the historic context, and at night it is washed in a moody progression of colors that evoke the northern lights. *David Sokol*



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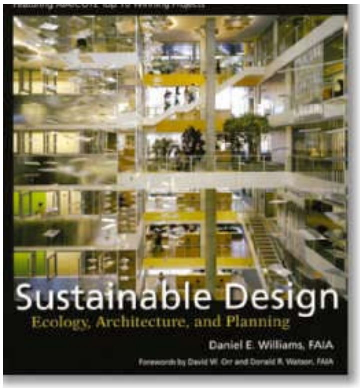
Book Reviews: Sustaining the conversation on sustainable design


Sustainable Design
Ecology, Architecture, and Planning
Daniel E. Williams, FAIA
Forewords by David W. Orr and Donald R. Watson, FAIA

Sustainable Design: Ecology, Architecture, and Planning, *by Daniel E. Williams, FAIA. Hoboken, New Jersey: John Wiley & Sons, 2007, 304 pages, $75.*

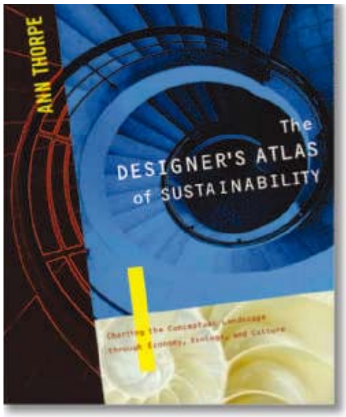
High-Performance Building, *by Vidar Lerum. Hoboken, New Jersey: John Wiley & Sons, 2007, 304 pages, $70.*

The Designer's Atlas of Sustainability, *by Ann Thorpe. Washington, D.C.: Island Press, 2007, 225 pages, $29.95.*

We seem to have two camps emerging in the nascent field of sustainable design: an informed one that remains sensitive to the high aims of architecture, ecology, and site, and then one we might call "design services 2.0," a kind of appliqué of green technologies onto the leftover bin of expired architecture. The literature reflects this, as many books focus on the latter camp, simply exploiting a trendy market. One good exception is the second edition of *The HOK Guidebook to Sustainable Design* (2005), which has become almost required reading on the subject. There are several books following this how-to approach, all couched in a larger question of what constitutes sustainability. And aside from the more philosophical books, such as *Natural Capitalism: Creating the Next Industrial Revolution*, by Hawken, Lovins, and Lovins (1999), and McDonough and Braungart's *Cradle to Cradle: Remaking the Way We Make Things* (2002), another common route is the detailed technical manual on building performance and technologies. In that genre, the American Society of Heating, Refrigerating, and Air-Conditioning Engineers's *ASHRAE GreenGuide* (2006) stands out [RECORD, March 2007, page 172].

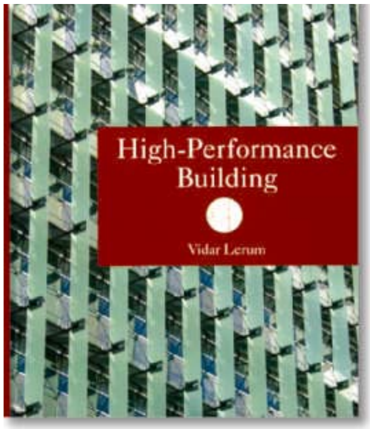
Clearly, any new book—and in 2007 there have been many—needs to do something different to stay relevant to the sustainable design community. This is especially true given that the various characteristics of sustainable design—daylight, natural ventilation, and responsible site orientation, to name a few—don't really change. In the case of the new book, *Sustainable Design: Ecology, Architecture, and Planning*, by the Seattle architect and urban planner Daniel E. Williams, FAIA, the intended reader is likely an architect new to sustainability, looking to follow up the HOK book. In that respect, Williams serves them well with an authoritative introduction to key issues and terms, most notably a persuasive argument defining sustainable versus green design. For Williams—borrowing conceptually from the theorist Manuel Castells—a sustainable design is one that embeds itself into the "flows" of the natural world, where a building must respond to a changing world. His benchmark is the natural catastrophe: If your building still functions as necessary during a blackout without relying on nonrenewable energy, you are approaching sustainability. Green design, on the other hand, merely concerns itself with efficiency and reducing fossil-fuel dependency.

The second half of Williams's book includes an overview of the award program of the American Institute of Architects's Committee on the Environment (AIA/COTE). Williams recounts, in part, each of the 10 annual award-winning projects since the program's inception in 1997 through 2006. He should know, as he served as chair of AIA/COTE in 2003. A review of case studies included in the book—such as SmithGroup's 2001 Chesapeake Bay Foundation Headquarters in Annapolis—reveals how important this program has been to sustainable design advocates.


ANN THORPE
The DESIGNER'S ATLAS of SUSTAINABILITY
Charting the Conceptual Landscape through Economy, Ecology, and Culture

On the other hand, *High-Performance Building*, by the Illinois architect and educator Vidar Lerum, eschews larger philosophical issues in favor of establishing step-by-step directions for analyzing the performance of existing buildings. Lerum considers performance as "annual specific energy use," situating that as a base from which architectural form emerges to serve a sustainable end. He then explains his process—including reviewing design documents, talking to the architect and owner, and modeling the building in energy software—for gauging the performance of an existing building, presumably because you, too, would want to analyze an existing building. Like Williams, but with more technical depth, Lerum dedicates the second half of his book to case studies, seven in total, including Morphosis's 2006 San Francisco Federal Building. While these are helpful, the book's first half seems misguided and perhaps better directed toward building retrofits, rather than analysis alone.

Ann Thorpe, a design educator in London, seems to establish a separate category of sustainable design book with her *Designer's Atlas of Sustainability*, which lays out a broader map of sustainability for designers (though it seems geared toward product design). She looks at terms like "ecology," "economy," and "culture" in order to establish a sort of fundamental world view for designers wanting to embrace sustainability. She aims to provide "ingredients rather than recipes," giving the reader a highly visual and accessible tutorial in subjects as diverse as lifecycle analysis and materials production to the effects of economic globalization and corporate responsibility. Whether these ingredients already pepper your practice depends in large part, according to Thorpe's agenda, on how much you care. Thus, the book would most help the young student of design, rather than the established professional who is not likely considering something like public sector design for the first time in a career.



That these three worthwhile books fill different niche interests suggests a broader concern—hardly surprising—for sustainable design, but you wonder how we can maintain this publishing cycle and what role it plays in what's actually getting built (or not). There is enormous talent being poured into thinking about sustainability right now, but you get the feeling that it's too disconnected and hasty, that many of these books exist more for their authors than for the reader. That most sustainable design literature still begins with a primarily materialist assumption—*building new must never stop*—while often only briefly mentioning concepts of inhibition, surely lends doubt to any book's underlying ambitions toward effecting true change. *Russell Fortmeyer*

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New Glass Technologies Improve Performance of Architectural Glass

Fenestration Advances Boost Energy Efficiency and Lower Maintenance Costs

Courtesy of **JELD-WEN® Windows and Doors**

Santa Barbara, California Residence. Architect: Mark Kirkhart, Design Arc of Santa Barbara; Builder: Mark Trabucco

Provided by JELD-WEN® Windows and Doors

Windows have traditionally provided daylight and fresh air for building occupants and given character to the building's façade. One of the most important elements in an architect's palette, windows work to establish the style and rhythm of a structure, and their design and placement are a key aesthetic concern.

Yet windows can surpass these traditional aesthetic and practical considerations and become even more significant partners in creating sustainable buildings. As manufacturers continually improve their products to meet the needs of their customers, architects should be aware of new and emerging technologies in order to specify the most appropriate windows on their projects and realize the potential of windows to enhance sustainability goals.

During the past two decades, advances in glass technology have produced a new generation of materials that offer improved energy efficiency, easier maintenance, lower operating costs and higher performance. This article will define the parameters used in measuring the energy performance of fenestration, and detail how technological advances in the fenestration industry are achieving savings in energy and life cycle costs.

Measuring Energy Performance in Windows

Fenestration—including windows, doors and skylights—has the ability to reduce the heating, cooling and lighting requirements of a building, and has become critical to achieving good energy performance in a structure. It is critical to note, however, that no one window is suitable for every application. A first step is to understand how energy performance is calculated. The main energy characteristics that form the basis for quantifying a window's energy performance are described as follows:

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **New Glass Technologies Improve Performance of Architectural Glass.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 177, then follow the reporting instructions or go to construction.com/CE/ and follow the reporting instructions.

Learning Objectives

After reading this article, you should be able to:

- Interpret the energy performance characteristics of windows.
- Discuss the newest window glass technologies.
- Specify appropriate impact-resistant and easy-to-clean windows for your projects.

U Values

Manufacturers usually represent the energy efficiency of windows in terms of their U-values (measure of heat loss). When there is a difference between the ambient air temperatures inside and outside a structure, heat is either lost or gained through a window. The U-value (or U-factor) is a measure of heat escaping the interior of the home. U-value ratings generally fall between 0.20 and 1.20. The lower the U-value, the greater a window's resistance to heat flow, the better its insulating value, and the lower the heating costs. In other words, the lower the U-value the better the energy efficiency of the window. Low U-values are most important in northern regions where outside temperatures are cold and heating costs are traditionally high.

In product literature, some manufacturers list the U-factor only for the glass itself, rather than for the entire window unit. If it is only for the glass, the U-value may be much better than a rating of the whole-product. Low-E (low-emissivity) and gas fills can provide cost-effective energy efficiency. The lower the U-factor, the greater the energy savings; U-factors between .3 and .4 are optimal.

> ***Fenestration—including windows, doors and skylights—has the ability to reduce the heating, cooling and lighting requirements of a building, and has become critical to achieving good energy performance in a structure.***

Solar Heat Gain Coefficient

The solar heat gain coefficient (SHGC) measures how well a product blocks heat caused by sunlight. SHGC is expressed as a number between 0 and 1. The lower a window's solar heat gain coefficient, the less sun-induced warmth it transmits into a building or house.

According to the U.S. Department of Energy, the solar heat gain coefficient of clear double-strength glass is 1.0. Glass with a solar heat gain coefficientt of 0.5 transmits half of that solar energy, and glass with a solar heat gain coefficient .75 transits three-quarters of that let through by clear double-strength glass. As the measure of effectiveness of blocking sun and heat, the shading coefficient is what drives air-conditioning loads. The lower the number, the more solar heat it resists, and the lower the cooling costs. Low SHGC ratings are most important in southern regions where outside temperatures are hot and cooling costs are traditionally high.

Visible Transmittance

Visible transmittance (VT) measures how much daylight comes through a window. VT is also expressed as a number between 0 and 1, and correlates directly with the percentage of light passing through the glass. In other words, a product with a .66 VT rating means that 66 percent of visible light is transmitted through the glass. The higher the VT, the more daylight is transmitted. A high VT is desirable to maximize the amount of daylight entering the occupied spaces. The more daylight entering a home or building, the greater the opportunity to reduce electric lighting.

Air Leakage

Cracks in the window assembly cause heat to enter and leave the building unchecked. Air leakage is measured in terms of the air that passes through a given unit area of window, such as 5 cubic feet of air passing through 0.5 square feet of window assembly. The lower the value, the less air will unintentionally pass through.

Condensation Resistance

How well a fenestration product resists the forming of condensation on its interior surfaces is its condensation resistance (CR). The higher the CR rating, the better that product resists condensation. CR is expressed as a number between 0 and 100.

Window Technologies for Energy Performance

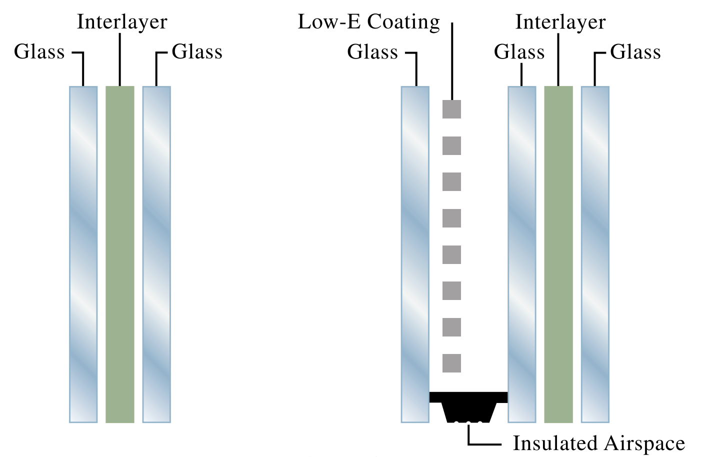
All of the energy-efficiency parameters discussed above are affected by the various components of a window: glass panes, low-E coatings, inert gas fills, edge spacers and frame materials. At their most effective, and in the proper climate and arrangement, these components lead to improvements in solar control, thermal comfort and energy savings.

Glass Layers

Standard single-pane glass has very little insulating value. Before the 1980s, a window's energy performance was improved primarily through the addition of glass panes, on the premise that double pane glass, in which two panes of glass enclose air space between them, has twice the insulating power of a single pane of clear glass. The trapped layer of air between the two panes creates the insulator that prevents warmth from escaping or entering the structure. Because the inner pane does not come into contact with the cold outside air, it stays warmer than the outside pane. Double pane windows can also insulate sound and eliminate condensation if the air space contains a moisture absorbing chemical.

Air Space

The depth of the air space between the glass panes will also affect energy performance: Spaces that are either too wide or too narrow tend to have higher U-values. Thicker air spaces insulate more effectively than thinner air spaces—up to a point. The optimal air



Glass Options

space for energy performance is 1/2-inch, which translates into a 3/4-inch insulating glass unit.

Gas Fills

By substituting a denser, lower-conductivity gas such as argon for the air in a sealed insulated glass window, heat loss can be reduced significantly. Argon is much denser than air, and has a lower thermal conductivity, resulting in lower heat transmission between the panes of glass, and providing even more insulation for double pane windows. Many major window manufacturers offer argon-gas fill as an option. Other gases that are being used in windows include carbon dioxide (CO_2), krypton (Kr), and argon-krypton mixtures.

Edge Spacers

The element that holds the panes of glass apart and provides the airtight seal in an insulated glass window is known as an edge spacer. Edge spacers are designed to interrupt the transfer of heat between the two panes of glass. Aluminum, a material with high thermal conductivity, was the traditional material used for edge spacers. But as more effective glass coatings became available, aluminum edge spacers were found to offer fewer benefits than those made of other materials. Stainless-steel edge spacers, for example, are preferable to aluminum because of their lower conductivity. This new generation of edge spacers helps maintain higher temperatures at the edge of the window unit, improving insulation and reducing condensation. Aluminum with thermal breaks, silicone foam and butyl rubber are other new technology options for edge spacers.

Frames

Window frames may be composed entirely of aluminum, wood, vinyl, and fiberglass, or they may be a combination of materials such as wood-clad vinyl or aluminum-clad wood. Because the frame occupies about one-quarter of the total window area, frame materials should be thermally non-conductive. Aluminum frames tend to have low interior surface temperatures even during the heating season and for that reason may not be suitable for all climates.

Wood frames have lower U-values, are not affected by temperature extremes, and usually do not promote condensation. Vinyl frames, too, have low U-values, and offer the benefit of reduced maintenance and competitive pricing. Generally speaking, wood, vinyl and fiberglass provide better insulating value.

Low-E Coatings

More than any other single improvement, the development of low-emissivity (low-E) coatings in the 1980s revolutionized window technology. Low-E glass is coated with microscopically-thin, optically transparent layers of silver sandwiched between layers of antireflective metal-oxide coatings. According to the U.S. Department of Energy, which has made substantial investments in a series of energy-efficiency research and development projects over the years, low-E glass coatings have saved the nation more than $8 billion in energy costs. According to industry estimates, over 50 percent of windows now sold have low-E glass.

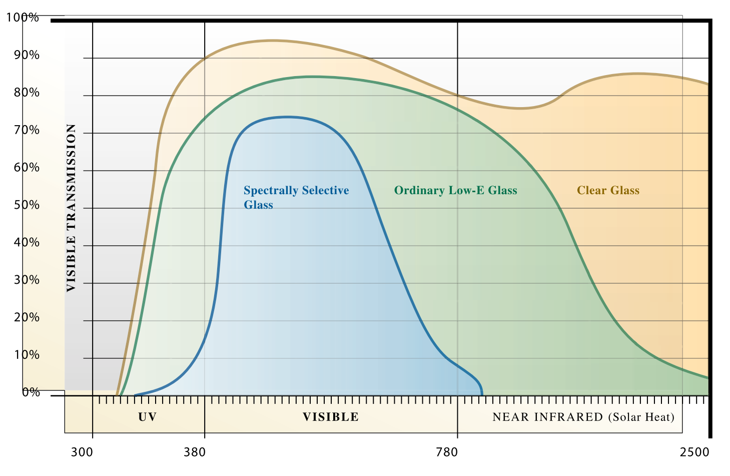
In order to understand the benefits of low-E coatings, it is important to note the components of sunlight. Among other things, sunlight contains visible light, ultraviolet (UV) light, and infrared (IR) light. Visible light enables us to see things and is welcome in a building interior. Ultraviolet light damages skin, wood, and fabrics and causes colors to fade; it is also associated with premature aging and skin cancer. The infrared portion of the spectrum consists of varying wavelengths. Short-wave IR light is absorbed by objects both inside and outside the building and is transformed into long-wave energy or heat. Infrared energy is desirable when the goal is to heat a room's interior by natural means; however, it is undesirable whenever building interiors become too hot, and excessive demands are placed on air-conditioning and ventilation systems.

The thin, transparent low-E coatings allow visible light to pass through, but they effectively reflect infrared heat radiation back into the room, which keeps interiors warmer and reduces heating costs. This reduces heat loss through the windows in the winter. In the summer, low-E glass windows admit visible sunlight while blocking infrared and ultraviolet solar energy that drives up cooling costs and damages window treatments, carpeting and furnishings. According to the DOE's Energy Efficiency and Renewable Energy Clearinghouse, windows manufactured with low-E films typically cost about 10 percent to 15 percent more than regular windows, but they reduce energy losses by as much as 30 percent to 50 percent. Further, advanced glass with spectrally selective coatings can reduce the cooling requirements of new homes in hot climates by more than 40 percent.

Not all low-E coatings are the same. Placement of the coatings and the types of light wavelengths that they block affect their overall performance. A variety of low-E windows are now available for various climate zones and different applications in any particular location.

Spectrally Selective Glass

Widely considered to the next generation of low-E glass, spectrally selective coatings provide all the benefits of low-E glass along with increased heat-gain protection and greater energy savings. Special coatings distinguish between desirable light and unwelcome UV and infrared light; these coatings admit light but not heat by



Spectrally selective coatings distinguish between visible light, unwelcome UV and near Infrared rays. The result is improved solar heat control, fading protection, and visibility.

selectively transmitting or reflecting specific wavelengths, achieving a good shading coefficient and good visible transmittance.

Traditionally, optimum solar block was achieved at the expense of visible light transmittance. Spectrally selective coatings deliver a balance of solar control and high visibility, with the most efficient products blocking as much as 95 percent of the sun's damaging ultraviolet rays, thereby protecting furniture, carpets, curtains and wall coverings and reducing premature fading. Their energy performance derives from a manufacturing process known as "sputter deposition," which enables manufacturers to deposit a super-thin coating of alloys and metals—including titanium and silver—onto the window film to block more infrared energy, or heat, and let through more visible light. Though the ideal would be to allow through all visible light and no infrared or UV light, the technology, though rapidly evolving, has not yet achieved that capability. Some of the most advanced versions have three coatings of silver, and are virtually clear, with a visible light transmittance of 66 percent and a solar-heat-gain coefficient of 0.22, significantly better than that of tinted, ordinary low-E glass. These values represent the highest visible light transmittance and the lowest SHGC commercially available.

Spectrally selective coatings promote thermal comfort. During the cold weather, a window's insulating capability has a direct impact on occupant comfort. The Efficient Windows Collaborative, which provides unbiased information on the benefits of energy-efficient windows, suggests that when a window's surface temperature falls below 52 degrees F, there is a risk of thermal discomfort. For optimal cold weather comfort, windows should be able to maintain a surface temperature of at least 52 degrees. The chart below demonstrates the insulating capability of spectrally selective glass in comparison with low-E and single- and double-pane windows. Spectrally selective glass is significantly better than both single and double pane clear glass, and slightly ahead of low-E glass in maintaining a warm glass surface in spite of frigid outdoor temperatures.

Inside glass and outside temperatures	-20ºF	+20ºF
Single-pane clear	0º	31º
Double-pane clear	37º	51º
Low-E	47º	58º
Specialty Selective	52º	61º

This table compares the interior glass temperatures of different glass types in two outdoor conditions.

Tinted Glass, sometimes called absorbing glass, has energy-absorbing materials within it that lower the shading coefficient and also provide a colored tint—generally bronze, gray, blue, or green. Tinted glass and tinted window films have long been used in commercial buildings to reduce heat gain through windows. Improved, lightly tinted windows are becoming more common for the residential market in the cooling-dominated climates of the Southern United States. These new coatings cut solar heat gain without reducing visibility to the extent that older tinted glasses and films have. The tinted or colored glass helps reduce glare, and by absorbing the sun's heat it reduces energy consumption and creates a more comfortable interior without obstructing the view outside. This glass is ideal for climates with intense sunlight: It reduces glare and visible light transmittance, while also keeping home and building interiors more comfortable in warm weather.

Reflective glass has better solar heat gain coefficients than tinted glass because they reflect rather than absorb most of the infrared heat. The reflective coating is made of thin layers of metals or metallic oxides deposited on the surface of the glass. While tinted and reflective glass achieves low solar heat gain coefficients, they also make the window appear dark, with traditional window films reducing the amount of natural light entering the building by as much as 88 percent.

Overall Performance

The energy efficiency of an entire window assembly can differ significantly from that of its glass. For optimal value, the energy performance of the entire window assembly is the key, including the frames and insulating glass spacers.

In addition, the building design should take into account the climate, the total window area of the building, choice of heating and cooling system, and the level of insulation. All of the factors will affect the choice of window that will produce the greatest energy savings and occupant comfort in a given situation. To determine the best choices, national rating systems have been developed to enable effective comparisons between windows.

Rating Systems

The National Fenestration Rating Council (NFRC) is a non-profit organization that administers a widely accepted, uniform and independent rating and labeling system for the energy performance of windows, doors, skylights, and attachment products. By providing a reliable way to determine a window's energy properties and to compare products, NFRC ratings enable architects and builders to determine how well a product will perform the functions of helping to cool a building in the summer, warm a building in the winter, keep out wind, and resist condensation. By using the information contained on the label, architects and builders can reliably compare one product with another, and make informed decisions about the windows, doors, and skylights they specify or buy.

NFRC adopted a new energy-performance label in 2005. It lists the manufacturer, describes the product, provides a source for additional information, and includes ratings for one or more energy performance characteristics. ■

This article continues online at
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See Quiz on the Next Page

To receive AIA/CES credit, you are required to read the additional online text, which can be found at **http://construction.com/CE/articles/0710jeldwen-1.asp**
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Program title: **"New Glass Technologies Improve Performance of Architectural Glass" (10/07, page 173).** AIA/CES Credit: This article will earn you one AIA/CES LU hour of health, safety, and welfare credit. (Valid for credit through October 2009). **Directions:** Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit. **To take this test online, go to construction.com/CE/**

Learning Objectives

After reading this article, you should be able to:

- Interpret the energy performance characteristics of windows
- Discuss the newest window glass technologies
- Specify appropriate impact-resistant and easy-to-clean windows for your projects

Questions

1. **U-Values measure:**
☐ **a.** Resistance to heat
☐ **b.** Light admitted
☐ **c.** Heat escaping the interior of the structure
☐ **d.** Ultra violet light absorbed

2. **A high visible transmittance (VT) in a window signifies:**
☐ **a** that heat is resisted.
☐ **b.** high degree of sunlight is blocked.
☐ **c.** low shading value.
☐ **d.** high degree of daylight is admitted.

3. **Before the 1980s, a window's insulating value was primarily improved through:**
☐ **a.** additional glass layers.
☐ **b.** aluminum clad frames.
☐ **c.** weatherstripping.
☐ **d.** argon-krypton mixtures.

4. **More than any single improvement, window technology was revolutionized by:**
☐ **a.** high-impact glass.
☐ **b.** low-E glass.
☐ **c.** spectrally selective coatings.
☐ **d.** self-cleaning glass.

5. **Spectrally selective coatings:**
☐ **a.** decrease visible light
☐ **b.** block 95 percent of the sun's damaging ultraviolet rays
☐ **c.** are available in blue, brown and gold
☐ **d.** may cause thermal discomfort

6. **Reflective glass**
☐ **a.** must be double pane
☐ **b.** are not used anymore
☐ **c.** has better solar heat gain coefficients than tinted
☐ **d.** permit maximum light into the building

7. **The National Fenestration Rating Council:**
☐ **a.** rates only the glass portion of the window unit
☐ **b.** requires air leakage and condensation resistance ratings
☐ **c.** does not require U-value ratings
☐ **d.** rates the entire window assembly

8. **Standards for impact-resistant glass**
☐ **a.** were developed in response to tornado damage
☐ **b.** involve two parts: impact testing and cyclic wind loading.
☐ **c.** are published only by ASTM
☐ **d.** do not allow window glass to be broken

9. **Easy-cleaning glass**
☐ **a.** will not work on cloudy days
☐ **b.** causes water to bead up on the glass surface
☐ **c.** contains a layer of TiO_2 that acts as a photocatalyst
☐ **d.** is only available for vertical glazing applications

10. **The coating on easy-cleaning glass**
☐ **a.** causes water to "bead up" and roll off the glass
☐ **b.** gives the glass a heavy tint that helps block UV rays
☐ **c.** decreases the surface tension of water causing it to sheet off the glass
☐ **d.** dramatically lowers the u-value

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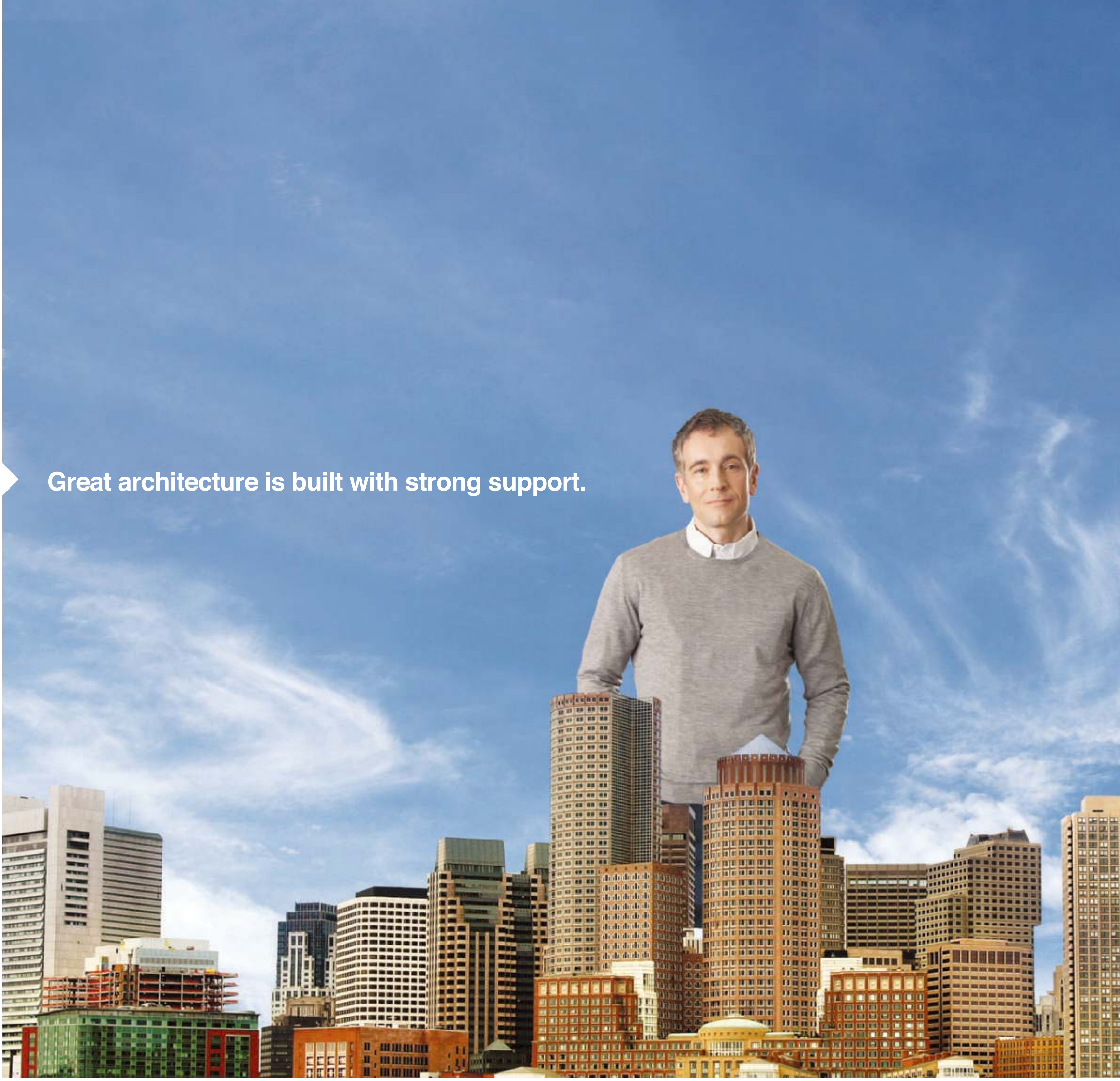
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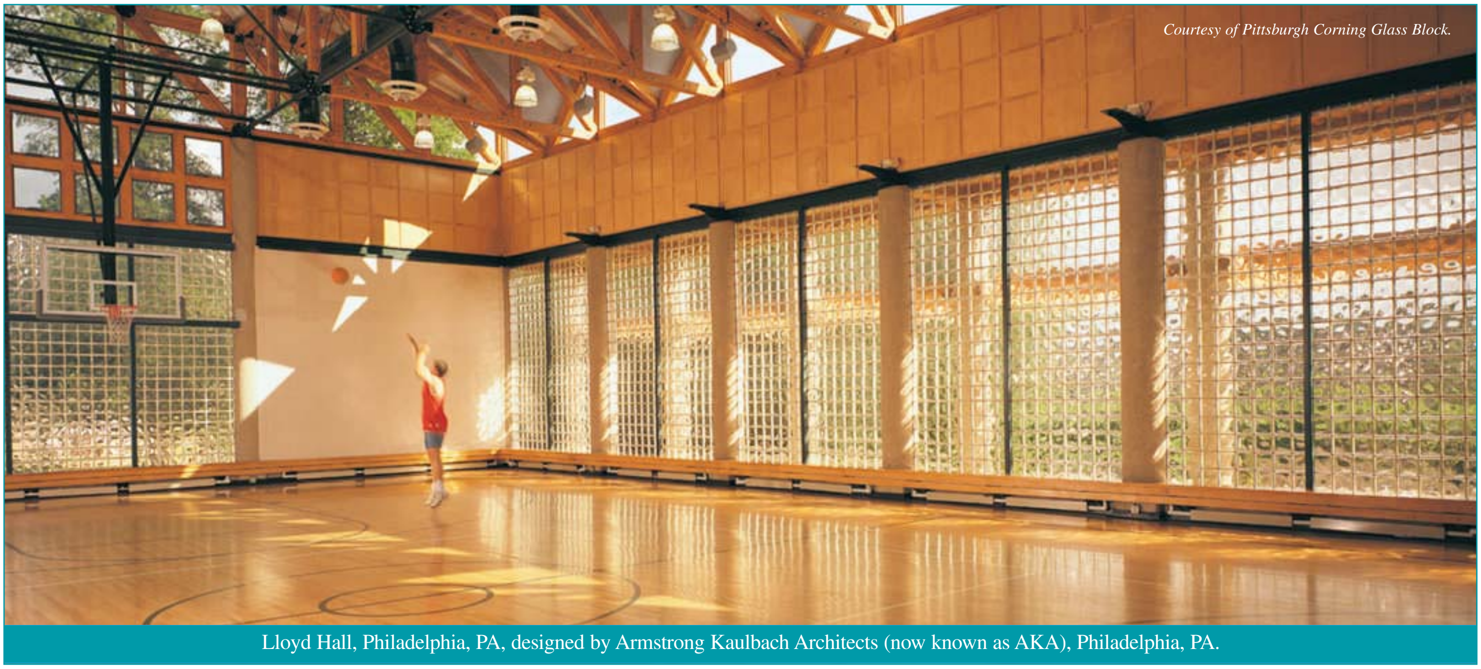
Designing With Glass Block:

Abundant Applications Provide Practical, Aesthetic and Green Solutions


Courtesy of Pittsburgh Corning Glass Block.

Lloyd Hall, Philadelphia, PA, designed by Armstrong Kaulbach Architects (now known as AKA), Philadelphia, PA.

Provided by Pittsburgh Corning Corporation

Glass block is a unique building material. It has a dynamic relationship with light—both natural and artificial. As light changes so do the material's appearance and the surrounding environment. A great range of light and privacy is available depending on the pattern and transparency of the glass block. Used creatively, this building material can produce dramatic aesthetic effects.

The transparency of light depends on the pattern of glass block used. The results range from maximum light transmission to increasing degrees of privacy. Even with the most opaque block, or when using glass blocks as accent pieces, the result is the same--a visual connection from inside to out, or connecting to inside spaces. This sensory stimulant offers more than just aesthetics--it is considered a necessary component of a psychological and physiological healthful living and working environment. This brick made of glass also provides energy efficiencies, sound control, security and even visual texture. Today, with the growing commitment to green building, its properties and benefits may contribute to U.S. Green Building Council (USGBC) LEED® (Leadership in Energy and Environmental Design) certifications.

Glass block can be used in residential as well as commercial projects, as non-load bearing walls, windows, or partitions. An astonishing range of applications is possible with a corresponding variety of aesthetic results. Glass block have been used in police stations, subway terminals, schools, parking garages and gymnasiums, in addition to numerous private and commercial new construction and renovations. Consider some interior uses: as a contemporary shower stall, a kitchen island or backsplash, or as the sidelights at the front door. Yet, before building aesthetics and even

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Designing With Glass Block: Abundant Applications Provide Practical, Aesthetic and Green Solutions.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 183, then follow the reporting instructions or go to construction.com/CE/ and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- Identify the structural properties of glass block when used as a building material.
- Discuss the unique performance abilities of glass block, such as fire protection, heat and light transmission, sound resistance, vandal resistance, and hurricane and earthquake resistance.
- Assess some of the economic and aesthetic implications of specifying glass block in specific building projects.

design can be considered, it is crucial to become familiar with the technical properties of glass block. Working with glass block requires a certain level of skill and a thorough understanding of the material.

Structural Properties

Glass block is manufactured through a simple, yet exacting process. Silica sand, soda ash, and limestone are mixed and melted in tanks heated to 2,300 degrees Fahrenheit. From those tanks a precise amount of molten glass is poured into a half-block mold. Two halves are sealed together, creating a partial vacuum within the unit, and then fed into an oven (called a lehr) to slowly cool and, in the process, strengthen. This is the annealing process. Each block is then treated with a special edge coating of polyvinyl butyral to increase mortar bond and allow for expansion and contraction. Each block is tested for clarity and consistency.

The unit can be hollow or solid and come in a variety of sizes, shapes, patterns, and textures. The most commonly used units are square (6-, 8-, or 12-inch sizes). Rectangular units (4x8-inch and 6x8-inch) are also available, as are bull-nosed edge blocks for finishing horizontal and vertical panels, and various corner and angular blocks.

What makes the choice of block all the more interesting is the wide range of patterns. Clear block with its smooth face offers high visibility and light transmission. Wavy and fluted patterns allow for moderate levels of visual privacy while maintaining high light levels. Even greater privacy comes with stippled, diamond, and tightly ribbed designs. Fibrous glass inserts are also available to provide maximum privacy and further temper light and heat transmission.

> ***What makes the choice of block all the more interesting is the wide range of patterns.***

Since glass block is made of glass and typically bonded together with mortar, it does not require any maintenance or special care. The durability is therefore exceptional because of the thickness of the faces and mortar bonding of the blocks. Unlike a typical glazing system or window, whereby the whole glass pane requires replacement upon damage, breakage in a glass block wall or window typically only requires a single block replacement. Many installations are over 50 years old, well beyond the typical life cycle of a window. This represents a considerable savings in material and maintenance.

Generally, two thicknesses are available. The standard 3-7/8-inch glass block includes the largest selection of patterns, sizes and shapes. Each 3-7/8-inch thick glass block is designed to provide stability and durability, as well as good insulation values, sound transmission, and fire resistance ratings. Thinner 3-1/8-inch block is specifically designed for prefabricated panels of limited size, for use as windows.

In exterior applications, maximum wall areas are based on design wind pressure. Twenty pounds per square foot is a commonly accepted value for wind load resistance for wall construction. The maximum area for exterior panels constructed of standard block is 144 square feet, with a maximum height of 20 feet or a maximum width of 25 feet. This panel is designed to withstand a 20 psf wind load—equivalent to about an 88-mph wind—with a 2.7 safety factor. If larger panels are required, horizontal and/or vertical stiffeners or shelf angles and expansion joints need to be incorporated to maintain the maximum areas recommended per component panel. Design of these structural members must be based on the design wind load and to an L/600 deflection (where L equals the distance between supports).

Interior walls are designed to a lateral load of 5 psf. Interior glass panels are permitted to be larger (up to 250 square feet) than similar exterior panels because of the lower load levels.

Non-load bearing. Sometimes referred to as “bricks,” glass blocks do not have the load-bearing capabilities as do other masonry products. In fact, glass block can only carry the load of its own weight. Therefore, where panels are inserted into openings, provisions must be made to support the construction above. The available structural support systems assure that the load from the surrounding wall is not transferred to the glass panel and that the possible deflection of the supporting members does not crack the panel.

At the same time, adequate provisions must be made for differential movement between the glass and the surrounding wall. It is recommended that expansion joints in the surrounding wall be located at the sides and top of each glass panel. This will isolate the panel and prevent a movement crack in the wall from projecting through the glass panel.

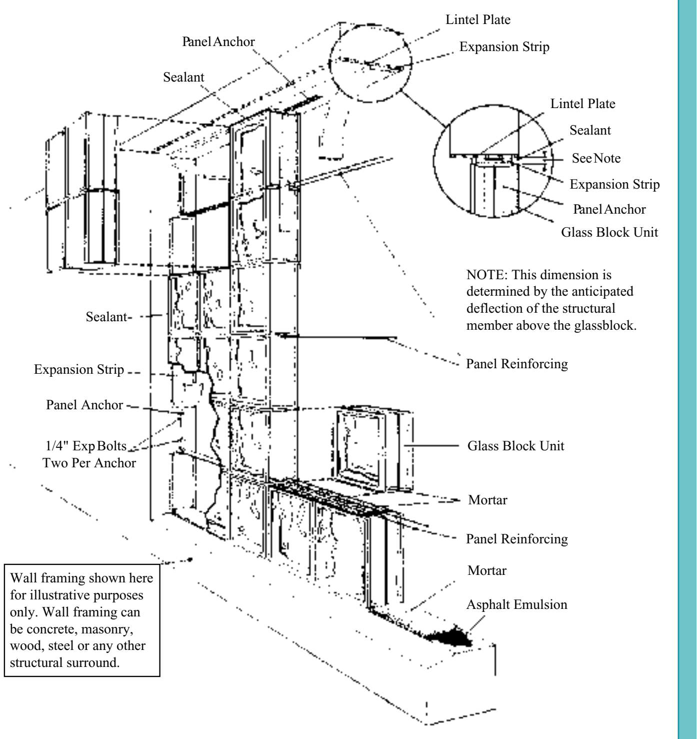
Mortar considerations. Unlike other masonry products (i.e., brick, concrete block, etc.), glass block is non-porous and does not absorb any moisture. Because of this, the consistency of glass block mortar must be stiffer (like peanut butter) than the wetter mortar used with other masonry products. All head and bed joints must be completely filled with mortar, and all joints struck smooth to prevent penetration and migration of moisture.

All model building codes allow the use of Type “S” or “N” mortar with glass unit masonry construction. Type “S” mortar is recommended for exterior applications. Type “S” consists of 1 part Portland cement, 1/2 part lime, and sand equal to 2-1/4 to 3 times the amount of cementitious material (cement plus lime), all measured by volume. (For exterior glass block panels, an integral type waterproofer is recommended.) No antifreeze compounds or accelerators should be used.

During final cleaning, common mortar-removing chemicals (muriatic acids of any strength) should not be used. Not that these chemicals are detrimental to glass; however, if they are strong enough to remove mortar off the faces of the block, they are also strong enough to remove the thin cement/lime film off the mortar joints, thereby exposing the sand aggregate. Rough joints such as these are highly susceptible to water intrusion.

Panel reinforcement. Horizontal joint reinforcement is important to control cracking due to expansion and contraction. This joint reinforcement should be spaced no more than 16 inches

Panel Anchor Construction


Lintel Plate
Panel Anchor
Expansion Strip
Sealant
Lintel Plate
Sealant
See Note
Expansion Strip
Panel Anchor
Glass Block Unit
NOTE: This dimension is determined by the anticipated deflection of the structural member above the glassblock.
Sealant
Expansion Strip
Panel Reinforcing
Panel Anchor
1/4" Exp Bolts
Two Per Anchor
Glass Block Unit
Mortar
Panel Reinforcing
Mortar
Asphalt Emulsion
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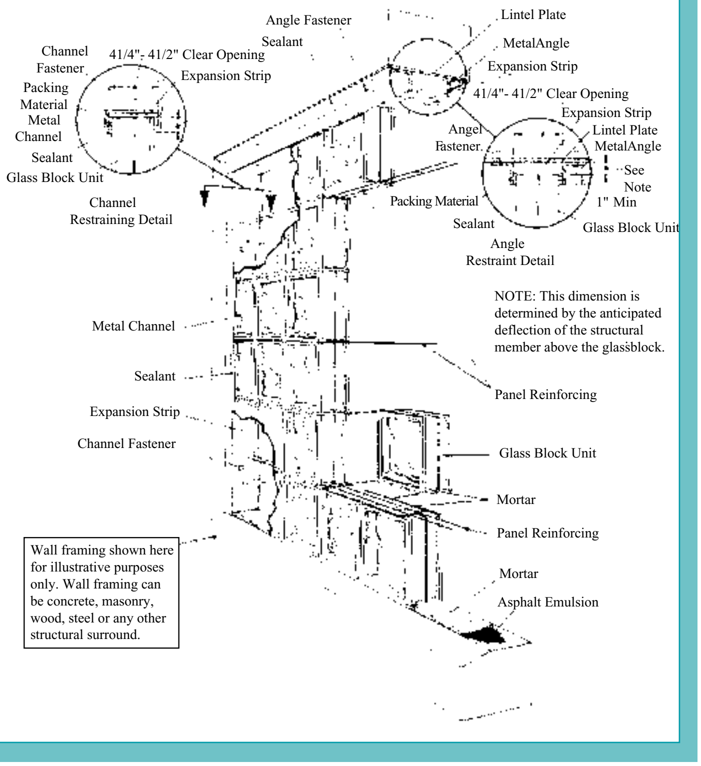
Channel-Type Restraint Construction


Angle Fastener
Lintel Plate
Sealant
Channel Fastener
41/4"- 41/2" Clear Opening
MetalAngle
Expansion Strip
Expansion Strip
Packing Material
Metal Channel
41/4"- 41/2" Clear Opening
Expansion Strip
Angel Fastener
Lintel Plate
MetalAngle
Sealant
See Note
Glass Block Unit
Channel Restraining Detail
Packing Material
1" Min
Sealant
Glass Block Unit
Angle Restraint Detail
NOTE: This dimension is determined by the anticipated deflection of the structural member above the glassblock.
Metal Channel
Sealant
Panel Reinforcing
Expansion Strip
Channel Fastener
Glass Block Unit
Mortar
Panel Reinforcing
Wall framing shown here for illustrative purposes only. Wall framing can be concrete, masonry, wood, steel or any other structural surround.
Mortar
Asphalt Emulsion

on center and extend horizontally the length of the panel. Stainless steel or hot-dipped, galvanized, 9-gauge steel, ladder-type reinforcement is made of two parallel wires with butt-welded cross wires at regular intervals.

Joint reinforcement should also be placed in the bed joint immediately above and below openings in the glass block panel. For curved walls, the inner wire is cut periodically so the reinforcement can be bent to the radius of the curve. The reinforcement is pressed into the partially filled mortar joint, then covered with the remaining mortar and trowelled smooth. Mortar joints should not be furrowed.

Expansion strips, made of dense fibrous glass, polyethylene, or mineral wood replace mortar at the jambs and head and at intermediate structural locations to allow for panel expansion and contraction.

Panel anchoring. Three methods for anchoring glass block panels are recommended to accommodate lateral support along the top and sides of each panel — panel anchor, channel, and chase systems. These supports are designed to resist the applied loads, or a minimum of 200 pounds per lineal foot of panel, whichever is greater.

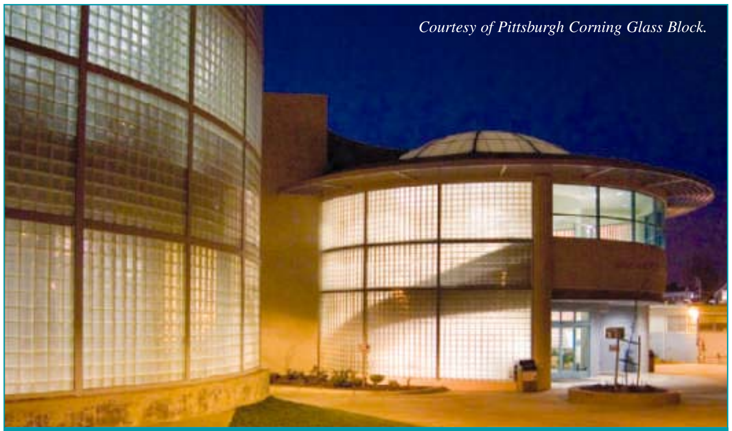
Panel anchors: Available in stainless steel or hot-dipped galvanized steel, panel anchors tie glass block panels into the surrounding frame at head and jamb locations. Anchors are used along the jambs and at the head, or they can be used in combinations with channel construction where one type of detailing is at the jambs and the other at the head. Anchors are normally placed a maximum of every 16 inches on center. This means that for an 8 x 8-inch block, panel anchors would be placed in every other course.

Channel framing: Either a metal channel or metal angles combined to form a channel can be used. The channel opening (for a nominal 4-inch-thick block) must be 4-1/4 inches to 4-1/2 inches wide by a minimum of 1-3/8 inches deep to allow for a 1-inch minimum recess of glass block into the channel and for placement of the expansion material inside the channel. It is critical that the channel opening be square, not tapered as in standard channels, so as not to pinch the edges of the glass block. The oversized opening allows the insertion of packing material and sealant between the recessed faces of the glass block and channel legs.

Chase method: A recessed chase can be inserted into concrete or masonry jambs and head, eliminating the need for anchors or metal channels. The dimensions described must be similar to those described above for metal channels.

Expansion joints. To accommodate movement of the glass, expansion strips 3/8-inch thick, are required along the top and sides of glass block panels. These joints are filled with a resilient material such as polyethylene, which allows the panel to expand and contract. In exterior walls, joints must be well caulked to prevent water penetration.

At the bottom of the opening, a water-based asphalt emulsion is placed on the sill prior to laying the first mortar bed. This provides a slip plane for the panel and also prevents water from being drawn out of the glass block mortar by absorbent sill materials, such as concrete, brick, wood, or other porous products.



College of the Sequoias Learning Resource Center, Visalia CA, designed by Spencer/Hoskins Associates, Altadena, CA

Curved walls. Curved panels require additional structural support where the curved section joins a straight section and at inflection points in multi-curved walls. One method is to connect the panel to a structural member with panel anchors. Installing a steel plate in a vertical head joint can provide a less visible support. Also, panel reinforcing should be modified to follow the contour of the curve by periodically cutting the innermost parallel wire and bending appropriately.

The inside minimum radius of a curved wall is influenced by the size of block being used. Creating a tighter curve means creating a thinner inside joint, which is not recommended, and a thicker outside joint, which may not be aesthetically pleasing.

Health, Saftey and Environmental Benefits

The unique properties of glass block are especially applicable to health and safety issues, in addition to providing a number of environmental advantages. They offer special performance characteristics regarding fire resistance; resistance to surface condensation, light, heat, thermal and shading performance; sound transmission; and hurricane and earthquake resistance. Equally significant is the potential role in green building and contribution to several categories in LEED certifications—both in quantifiable and qualitative measures.

Green building now includes far more than data and performance of building products. Occupants' comfort and well-being and factors such as daylight are critically important for Green Building—especially when designing for the unique needs of children of all ages. Another factor in Green Building is life cycle analysis, which quantifies the impact of a product or building from raw materials used through its disposal or reuse. While life cycle analysis is, as yet, hard to quantify, it is certainly an issue to consider when specifyng green products. Glass block has the advantage of having a relatively low life cycle impact, being both recyclable and manufactured from unlimited natural resources. Moreover, being 100 percent glass, it does not emit any harmful volatile organic compounds (VOCs).

Fire-protection. Presently, no glass block assemblies qualify as fire-rated wall assemblies. Unlike the wall assembly test that measures a material's integrity, stability and thermal transmission, the glass block window test only determines the ability of the assembly to remain structurally sound and prevent passage of smoke and other noxious fumes during the fire test. Therefore, all assemblies must meet standards set for windows (ASTM E-2010) and NFPA 257) rather than for walls (ASTM E-119).

All UL fire-rated glass block on the market meets a 45-minute or longer duration test. Thicker faced and solid units are available with ratings of 60 minutes and 90 minutes. Basically, the window assembly test consists of exposing a panel to a fire under controlled temperature conditions in a furnace. The panel is removed from the furnace after 45 (or 60 or 90) minutes and immediately subjected to a standard water hose steam test to determine impact and thermal shock effects. A glass block window assembly passes the hose stream test if at least 70 percent of its glass blocks do not develop openings through both faces of the block. ■

Lloyd Hall, Boathouse Row, Philadelphia, PA

Sited along Boathouse Row in Philadelphia, PA, Lloyd Hall was expected to serve a variety of needs. Funded jointly by the Commonwealth of Pennsylvania and the City of Philadelphia it also needed to be durable enough to withstand the rigors of a demanding public, seven days a week. “We designed Lloyd Hall to be as multi-functional as possible,” says Lisa Armstrong, AIA, Armstrong Kaulbach Architects (now known as AKA), Philadelphia, PA. “It is intended to be all things to all people, while having a highly crafted design to fit in with Boathouse Row. Aesthetically, we were trying to make a statement in connecting with the past and the present, while also reflecting the needs and the look of the future.”

The two-story, 12,000-square foot building features a grand gymnasium, restrooms, banquet facilities, cafe concessions, information center and balcony. Outside, there are accommodations for a large public terrace, stepping down to the water's edge.

The 4,500-square foot gymnasium, Lloyd Hall's focal point, houses events ranging from basketball games to weddings. It required materials that were vandal-resistant yet attractive. To meet the dual requirements of high-durability and pleasing aesthetics, Armstrong specified solid glass block for three of the gym's four walls. From both interior and exterior vantage points, the solid glass block is visually appealing while connoting the sense of openness. The solid glass block transmits 80 percent of available light in both directions, while brightening the interior with natural light. A variety of traditional glazing options were ruled out because of vandalism concerns. “If we didn't use glass block, we would be looking at a rec center without windows, which would not be appropriate for the park setting,” said Armstrong.

This article continues online at
http://www.construction.com/CE/articles/0710pittsburgh-1.asp

See Quiz on the Next Page

To receive AIA/CES credit, you are required to read the additional online text, which can be found at **http://www.construction.com/CE/articles/0710pittsburgh-1.asp**
The quiz questions below include information from this online reading.

Program title: **"Designing With Glass Block: Abundant Applications Provide Practical, Aesthetic and Green Solutions" (10/07, page 179).** AIA/CES Credit: This article will earn you one AIA/CES LU hour of health, safety, and welfare credit. (Valid for credit through October 2009). Directions: Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit.
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Learning Objectives

After reading this article, you should be able to:

- Identify the structural properties of glass block when used as a building material.
- Discuss the unique performance abilities of glass block, such as fire protection, heat and light transmission, sound resistance, vandal resistance, and hurricane and earthquake resistance.
- Assess some of the economic and aesthetic implications of specifying glass block in specific building projects.

Questions

1. What is the maximum square footage for an exterior standard glass block wall built without stiffeners or shelf angles?
☐ **a.** 4 square feet
☐ **b.** 12 square feet
☐ **c.** 144 square feet
☐ **d.** 350 square feet

2. Since glass block is nonporous and does not absorb any moisture, the consistency of the mortar used must be?
☐ **a.** wet.
☐ **b.** soft (like butter).
☐ **c.** stiff (like peanut butter).
☐ **d.** dry.

3. What should horizontal joint reinforcement do?
☐ **a.** Control cracking due to expansion and contraction
☐ **b.** Be placed no more than 16 inches on center and extend horizontally the length of the panel
☐ **c.** Be pressed into the partially filled mortar joint, then covered with the remaining mortar and troweled smooth
☐ **d.** All of the above

4. Glass block anchoring methods include the
☐ **a.** panel anchors, chase and running methods.
☐ **b.** channel, running and panel anchors methods.
☐ **c.** panel anchors, channel and chase methods.
☐ **d.** channel, chase and running methods.

5. Additional structural support for curved walls
☐ **a.** should be placed where the curved section joins a straight section and at inflection points in multi-curved walls.
☐ **b.** is not necessary if glass block meets hurricane code.
☐ **c.** does not need to follow the contour of the curve.
☐ **d.** is independent of the size of the block used.

6. All UL fire-rated glass block on the market meets a 45-minute or longer duration test meeting what standard?
☐ **a.** ASTM E-2010 and NFPA 257.
☐ **b.** ASTM E-119.
☐ **c.** ASTM E-02.
☐ **d.** ASTM E-30.

7. Solid 3-inch glass block has
☐ **a.** an R-value of 1.75.
☐ **b.** U-value of 0.87.
☐ **c.** less thermal resistance than single-glazed 1/8-inch-thick plate glass.
☐ **d.** a shading coefficient of 3.5.

8. Solid 3-inch glass block units that have been ballistics-tested and component-recognized provide what level(s) of ballistics?
☐ **a.** No resistance
☐ **b.** UL level 1
☐ **c.** UL levels l and 2
☐ **d.** UL levels 1, 2, and 6

9. Hollow glass block has an STC
☐ **a.** higher than a solid glass block.
☐ **b.** lower than a solid glass block.
☐ **c.** equal to flat sheet glass.
☐ **d.** higher than a 4-inch brick wall.

10. Hurricane-rated glass block must
☐ **a.** have a lesser face thickness than standard block.
☐ **b.** meet 150 psf design pressure in Dade County.
☐ **c.** be mounted in a panel measuring less than 4 feet by 4 feet.
☐ **d.** meet ASTM E-1886 and ASTM E-1996 requirements.

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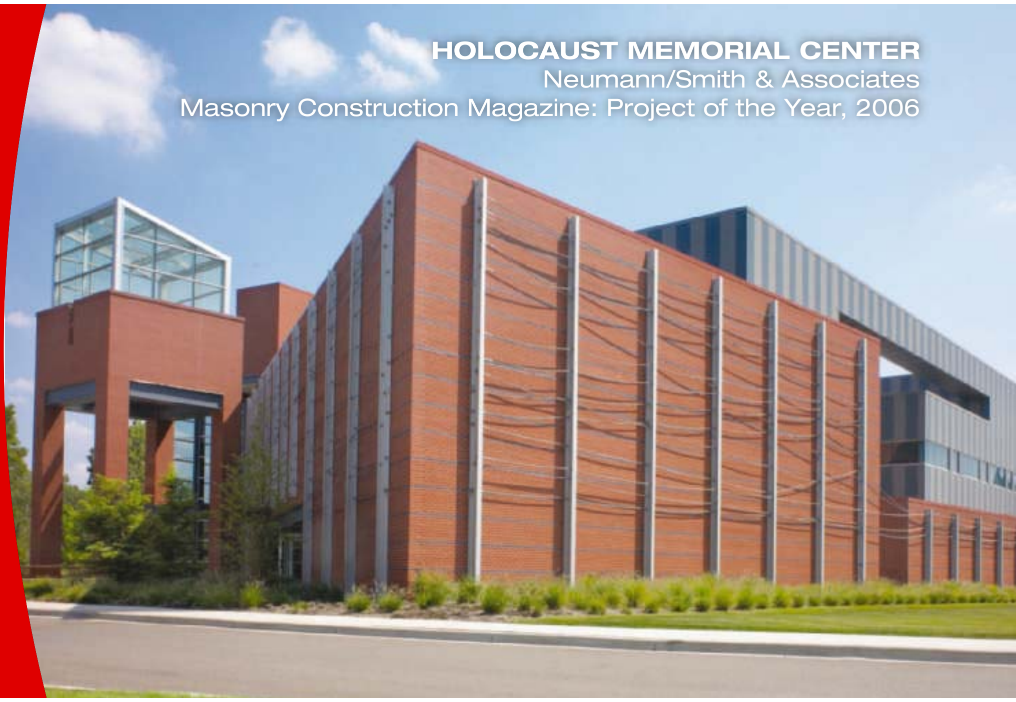

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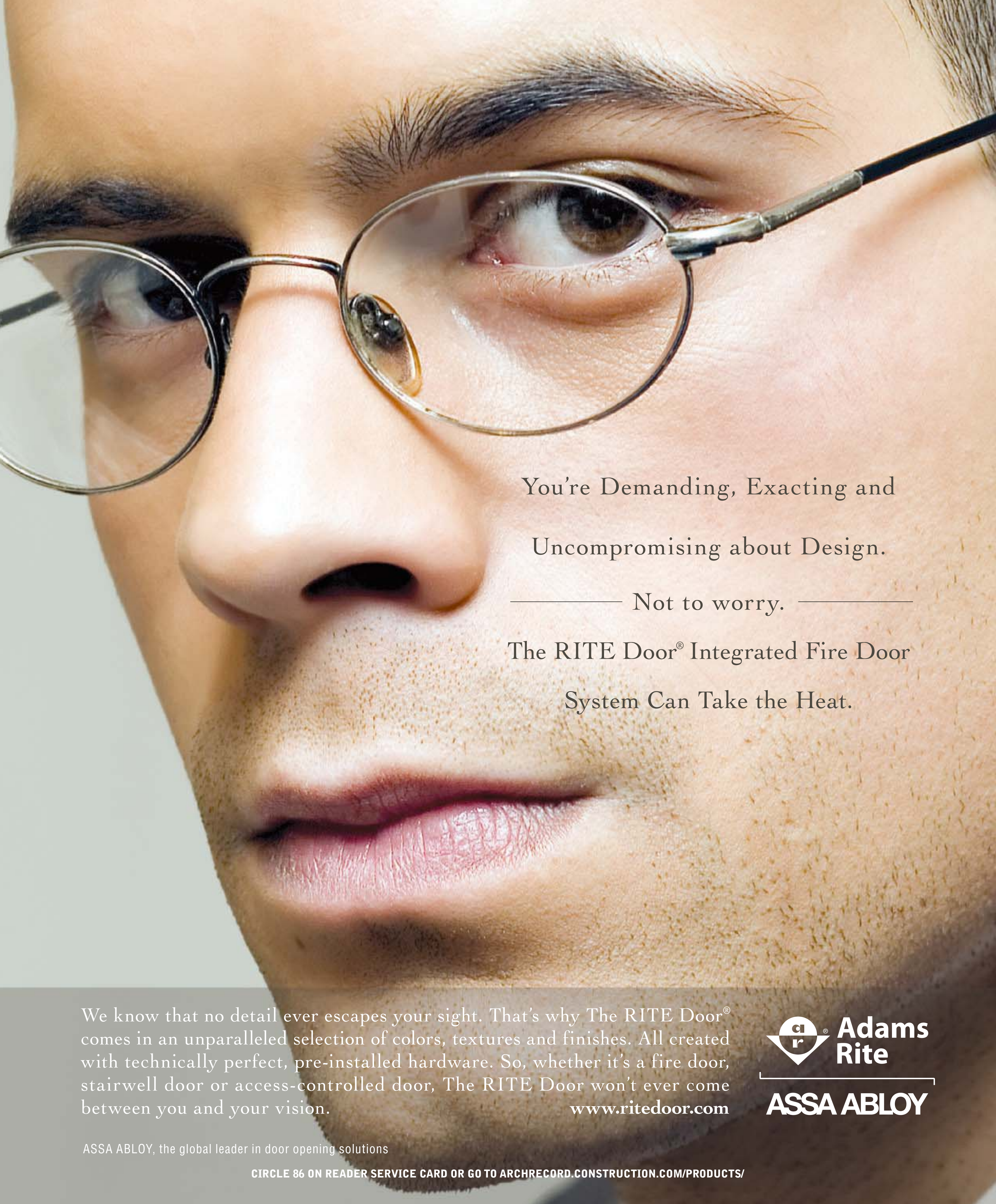
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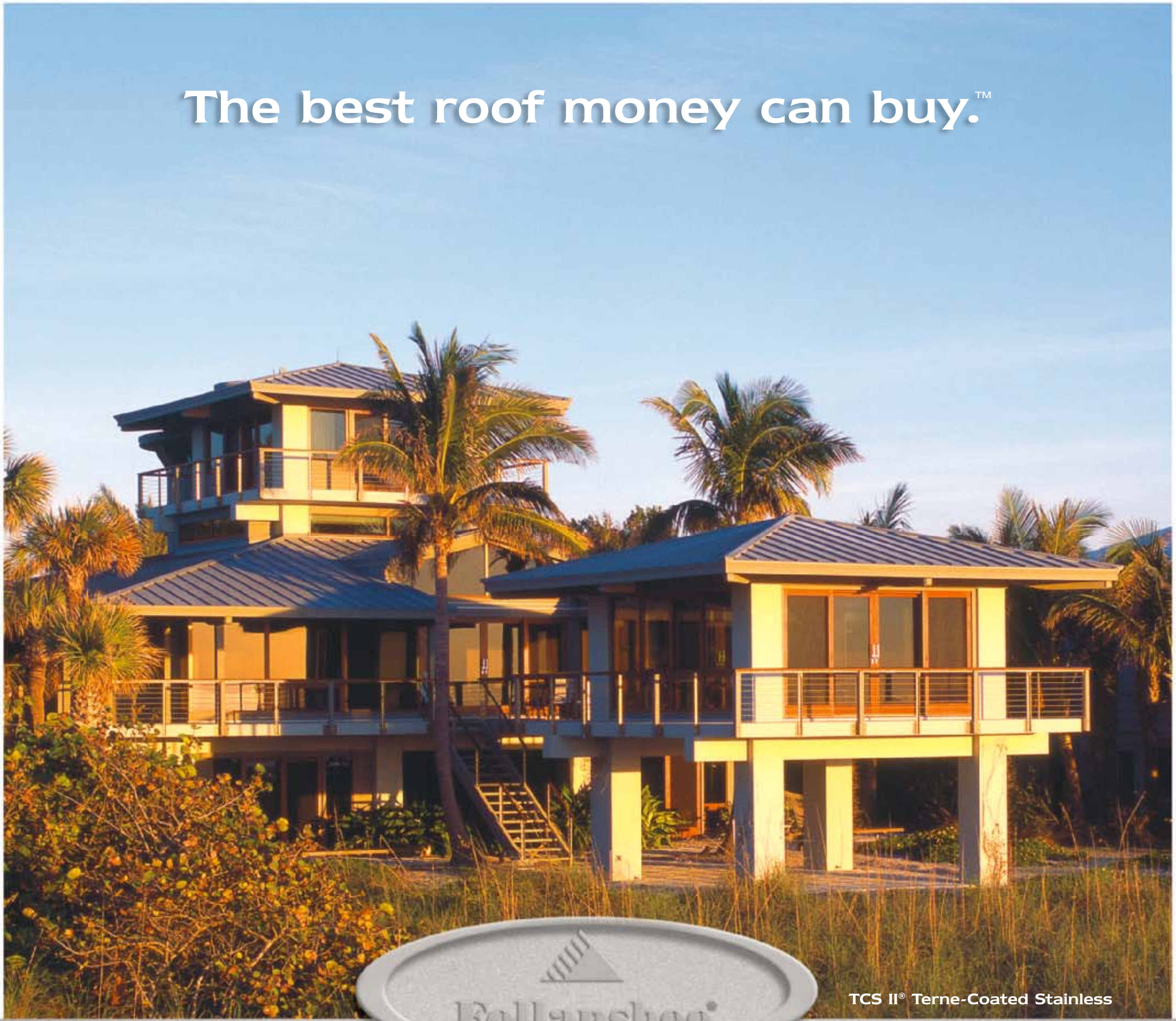

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Residential

Modern-day compounds exhibit timeless design intelligence

In agricultural societies, people have built residential compounds for thousands of years because such multibuilding dwellings neatly separate different functions (sleeping, eating, cooking) and occupants (family, guests, farm animals). While the owners of the compounds shown here need not worry about the cooking fire burning down the house or the pigs invading the dining room, they have their own reasons for compound life. In the Montauk, New York, and Lake Tahoe, Nevada, houses, freestanding guest quarters provide privacy for visitors and homeowners alike. Separate public and private areas in the Evans Residence and the 1 + 3 = 1 House in California create convenient hierarchies of access. In all featured projects, the buildings define interspersed outdoor areas for gardens, pools, spas, porches, and courtyards. Some villagelike, some more formal, these four ensembles provide exciting design challenges for the architects and inviting benefits for owners. *Jane F. Kolleeny*

PHOTOGRAPHY: © PETER MAUSS/ESTO

BRIEFS

Founded in 1999 by Cameron Sinclair and Kate Stohr, Architecture for Humanity started on a shoestring but always had an ambitious mission—to provide architectural solutions to communities in need. In 2006, it won the prestigious TED Prize, allowing it to create the Open Architecture Network (OAN), an open-source community tool that allows architects to collaborate online. Unveiled in February 2007, the site today has over 3,700 volunteer designers working on about 217 different projects. Among these is the Biloxi Model Home Project. The project—a joint effort of the Biloxi Relief Recovery and Revitalization Center, the Gulf Coast Community Design Studio of Mississippi State University, and AFH—invited 12 architects to submit residential designs. See www.architectureforhumanity.org, Robert Ivy's blog about his recent trip there at architecturalrecord. com, and continuing coverage in RECORD.

According to the AIA Home Design Trend Survey, healthy activity in home improvement during the second quarter of 2007 continues with a decidedly green flavor, despite housing-market woes. "Structural insulation panels, geothermal heating/cooling systems, tankless water heaters, and green flooring products such as bamboo and cork are all in high consumer demand," said AIA chief economist Kermit Baker, Hon. AIA. A recent AIA poll revealed that 91 percent of registered voters said they would be willing to pay $5,000 more for a house that uses less energy. See the full report at www.aia.org/aiarchitect.

The Getty Center in Los Angeles holds a substantial archive of the work of mid-20th-century residential designers. In 2005, photographer Julius Shulman donated an image library illustrating more than 7,000 projects by Frank Lloyd Wright, Richard Neutra, R.M. Schindler, Charles Eames, Pierre Koenig, and others—creating a centerpiece for further collections. This summer, the archives of Ray Kappe and John Lautner became the property of the Getty. The collections will eventually be made available to the public.

The Discovery Channel plans to help rebuild Greensburg, Kansas, a city ravaged by a tornado this past May. With Leonardo DiCaprio serving as executive producer, *Eco Town*, a 13-part series that chronicles the rebuilding efforts, will be the centerpiece of the launch of Discovery's new cable channel Planet Green. See www.planetgreen.discovery.com.—*Jane F. Kolleeny*

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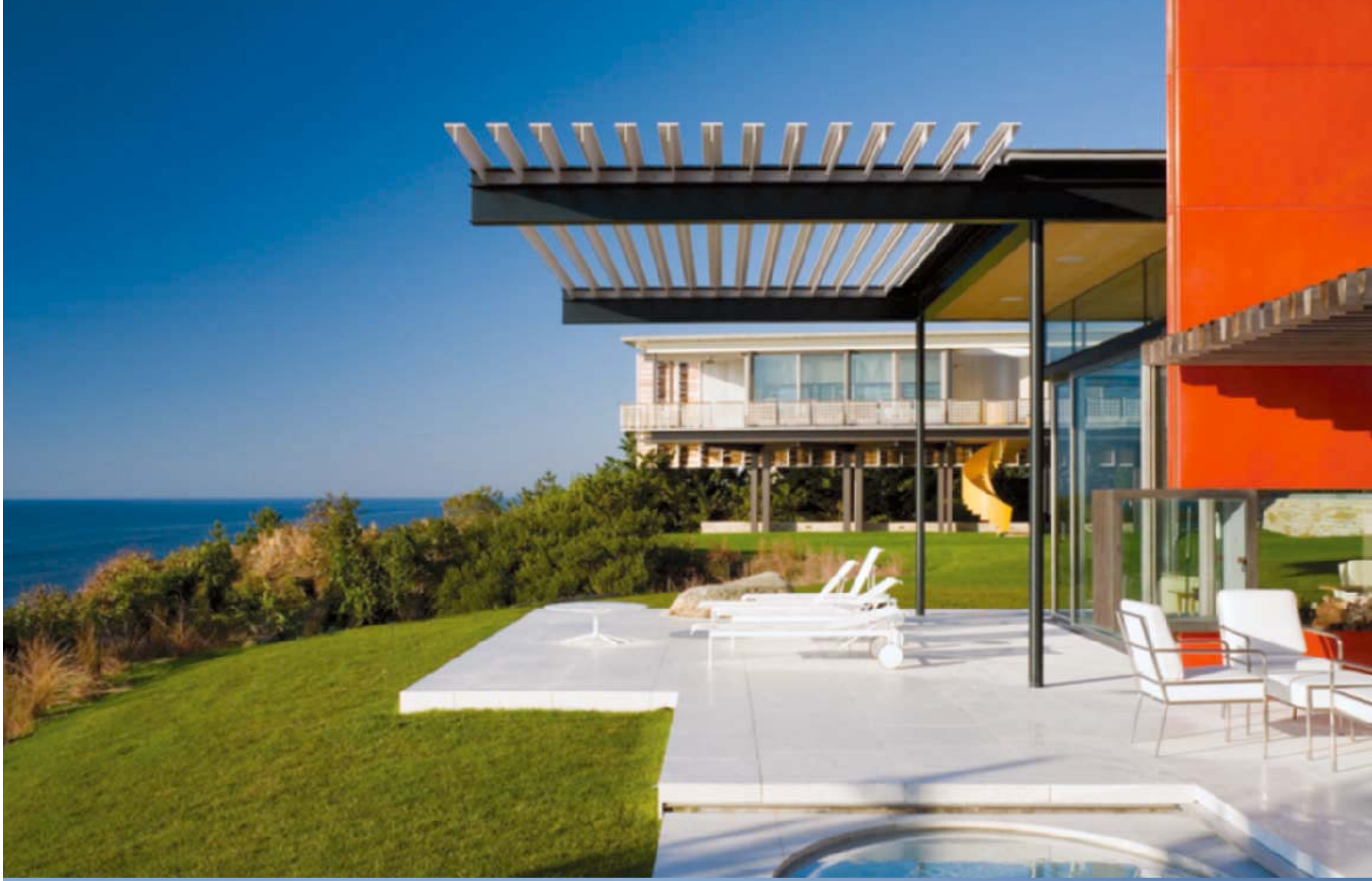
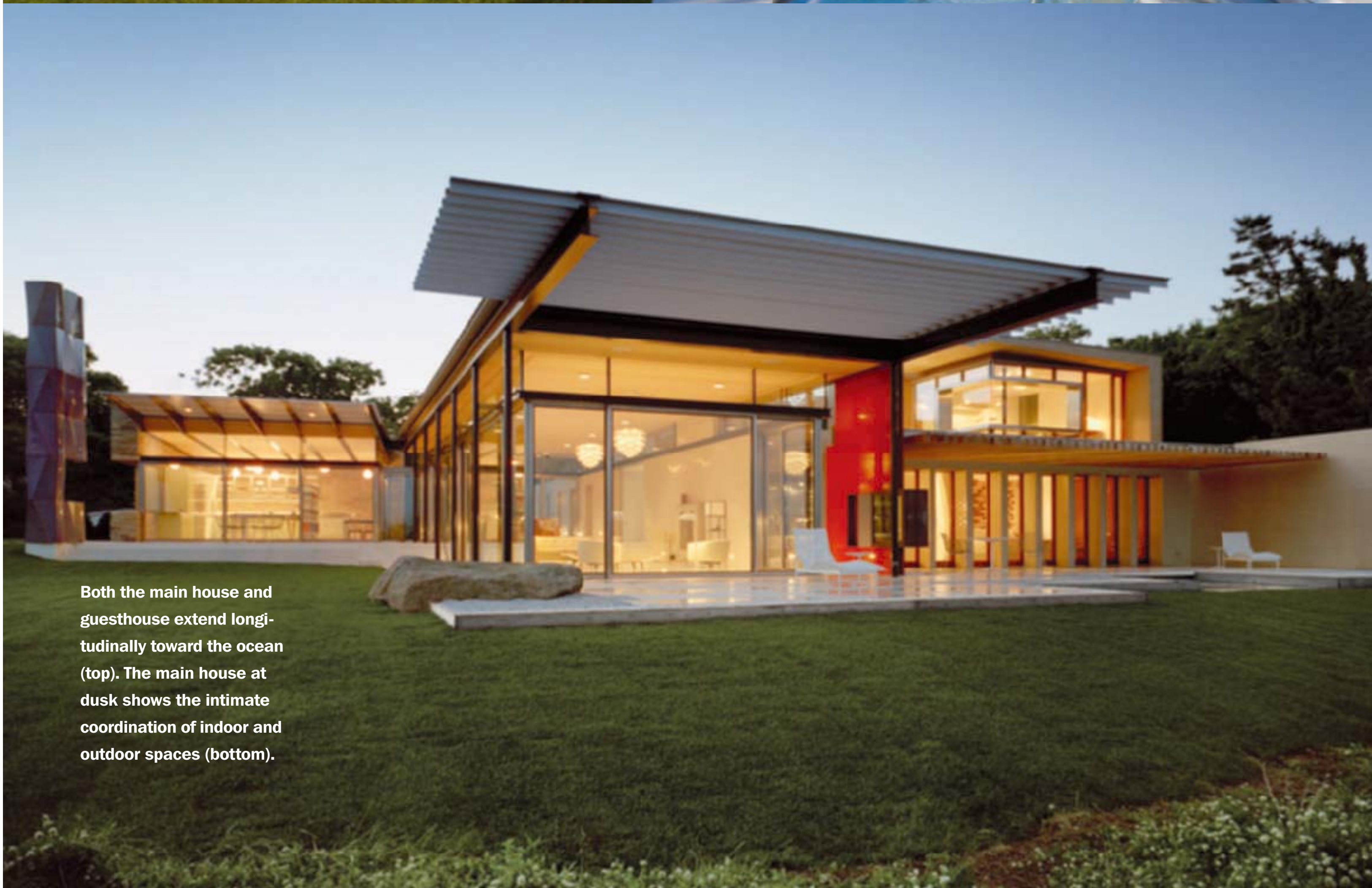
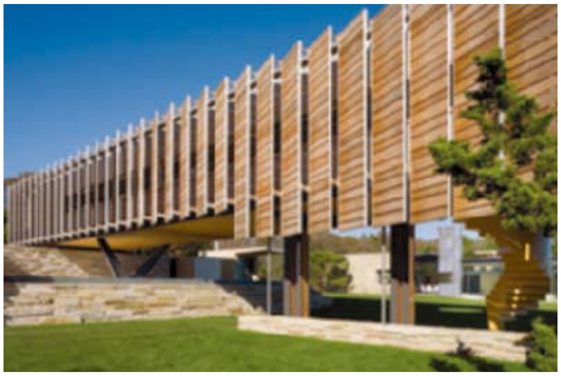
ONLINE: For a complete list of sources, go to ***architecturalrecord.com/residential/***. Submit your residential project to ***construction.com/community/gallerylist.aspx***.

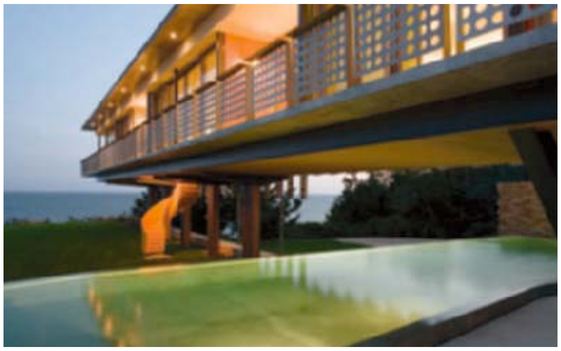


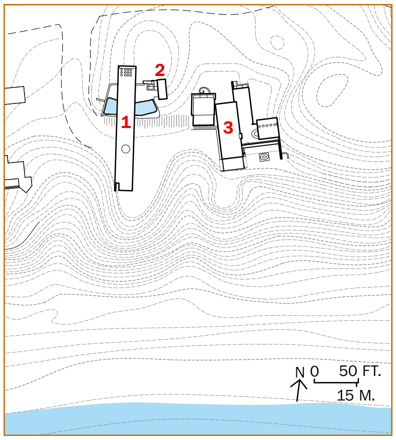


Both the main house and guesthouse extend longitudinally toward the ocean (top). The main house at dusk shows the intimate coordination of indoor and outdoor spaces (bottom).

Case Study Houses inspire **Montauk Compound**

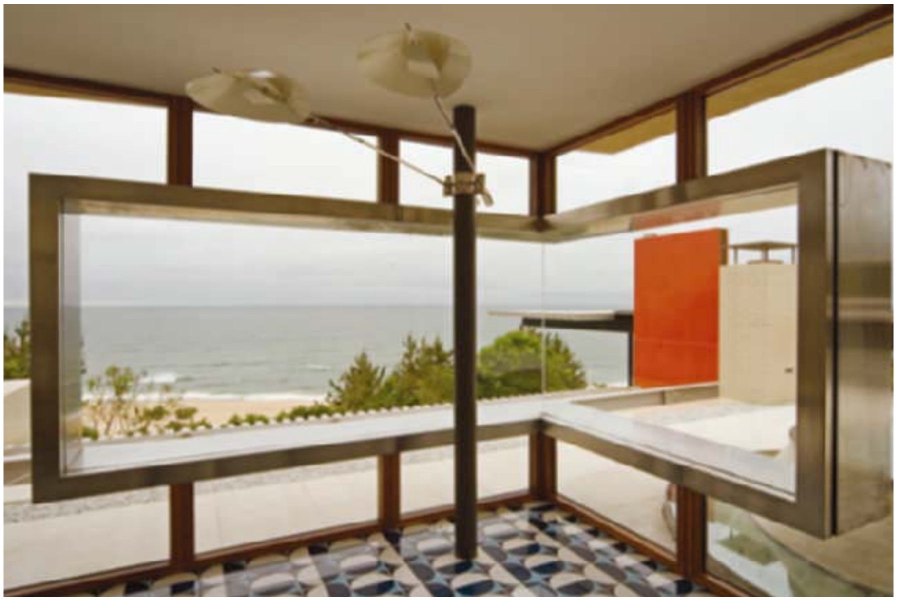






Wood louvers cover the back, south-facing side of the guesthouse (far left top). A continuous outdoor balcony with a distinctive slotted railing wraps its north side (far left bottom). An infinity pool, raised up and tucked into the guesthouse, offers ocean views (far left bottom). Full-height windows in the main house open to a porch and the sea beyond (below).

1. *Guesthouse*
2. *Pool house*
3. *Main house*



PHOTOGRAPHY: © PETER MAUSS/ESTO

By Jane F. Kolleeny

Jim Biber, FAIA, worked with his clients for seven years on this residential compound on a ridge overlooking the Atlantic Ocean in Montauk, New York. But instead of being exhausted by the long process, with its delays in approvals and construction, everyone involved in the project readily admitted their love for design kept them motivated and engaged from start to finish. Biber, a partner at the international design firm Pentagram, has designed 12 projects for the clients, a couple, including this one. He describes the clients as more patrons than owners. They in turn have succinctly presented their point of view: "We could buy a Picasso, but this was a lot more fun."

Inspiration for the project came from Midcentury Modernism, in particular the Case Study Houses program, run by *Arts & Architecture* magazine in the 1940s, '50s, and '60s. The program, which commissioned houses by Charles and Ray Eames, Craig Ellwood, and others, epitomized a new, less formal lifestyle characterized by an easygoing relationship between indoors and out, and an emphasis on bringing design in close proximity to nature. Biber's Montauk residence embodies these qualities, driven to a large extent by the owners' Midcentury Modern furniture collection, considered by their dealer to be one of the finest in America. "The furniture, rather than being something we simply poured into the houses, was the inspiration for the houses and a part of the design ethic itself," says Biber.

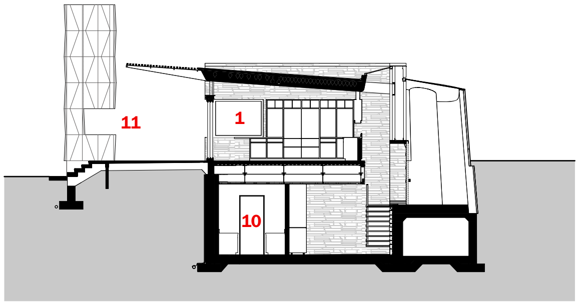
At the beginning of the project in 1999, the architect and owners took a guided tour, organized by the Cooper-Hewitt, National Design Museum, of Modern postwar houses in Los Angeles and Palm Springs, California. The trip allowed them to expand their knowledge and develop a common vocabulary, which became the basis for communication during the design process.

The site created enormous challenges and opportunities. Working with two contiguous, 2-acre building lots with zoning and easement restrictions, and limitations imposed by the bluffs, the deep beach, and neighbors on both sides, the architect used the restraints to evolve the design gradually. "With the goal of a porous outdoor room, boundaries were developed over time. The impact of the main house became clear, and the neighbors built a house overlooking the property. Like a chess game, each move was a reaction to the previous one, with a big idea in mind," explained project manager Michael Zweck-Bronner.

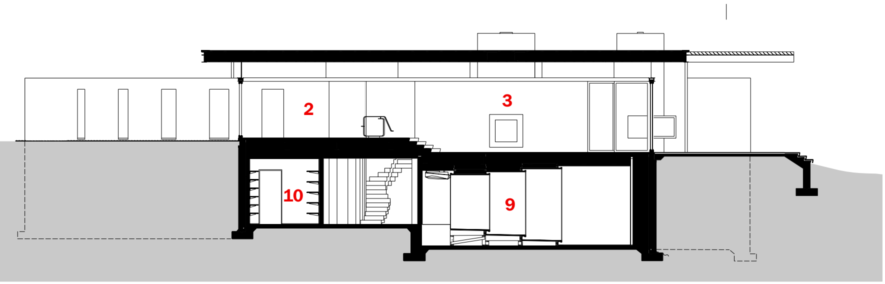
The low-slung, 7,192-square-foot main house consists of two back-to-back, L-shaped sections: a glass-and-steel unit in the front containing the living, dining, and kitchen areas; and in the back, a more densely packed private wing with a master-bedroom/sitting-room suite and a guest suite. A tiny second-story study tops the house, and a full

---

Project: *Montauk Compound, Montauk, New York*
Architect: *Pentagram—James Biber, FAIA, design partner; Michael Zweck-Bronner, project manager*
Engineer: *Anchor Consulting*
General contractor: *Men at Work*

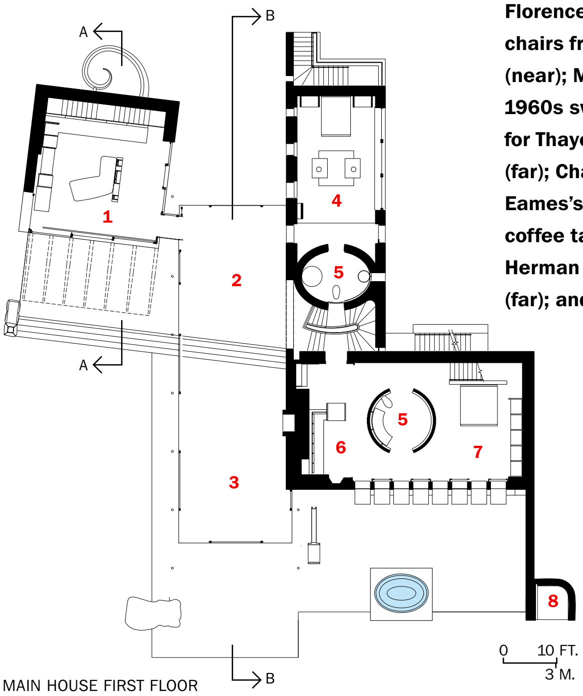


MAIN HOUSE SECTION A-A



SECTION B-B

1. *Kitchen*
2. *Dining room*
3. *Living room*
4. *Guest bedroom*
5. *Bath*
6. *Sitting room*
7. *Master bedroom*
8. *Outdoor shower*
9. *Screening room*
10. *Storage*
11. *Outdoor fireplace*



MAIN HOUSE FIRST FLOOR

Outdoor rooms (above left) can be found tucked into shoulders of the houses. The living-room furniture (above right) includes a Hvidt and Nielsen 1950s coffee table; Florence Knoll armchairs from the 1950s (near); Milo Baughman 1960s swivel chairs for Thayer-Coggin (far); Charles and Ray Eames's "Surfoard" coffee table for Herman Miller, c. 1954 (far); and much more.

basement contains a screening room, gym, darkroom, and utility areas.

Across the courtyard, the architect raised the 2,475-square-foot guesthouse one story above ground and gave it a vibrant yellow circular outdoor stair. Its long, rectilinear form and single-loaded balcony access was a reference to the indigenous motel typology, explains Biber. Splashes of beach-ball color accent its robust interior and exterior design. Biber says working on the guesthouse was like sitting at the kids' table at Thanksgiving: more fun and fanciful than being at the adults' table.

For the main house, Biber specified materials that include terrazzo for floors in the public areas, walnut and cypress wood paneling in the bedrooms, Alaskan yellow cedar ceilings in the living/dining rooms, and ceramic floor tiles designed by Gio Ponti in the bedrooms. He used patterns made from circles and rectangles as a repeating motif in the guesthouse balcony rail, the main-house skylights and bathrooms, and the entry gate to the compound. Enormous sliding glass doors open to the courtyard and the ocean, blurring the distinction between indoors and out. Two terracotta chimneys outside, one blue and one red, along with the yellow stair, provide dashes of color and verticality to the mostly quiet rectilinear forms.

The elusive boundaries between the buildings and outdoor spaces pay tribute to the Case Study House program. Here, the architect considered not only his design's visual impact, but how it would engage other senses, as well. In particular, he wanted the residential compound to embrace nature by capturing the omnipresent sound of the ocean. As Biber describes it, "The house is like a vessel for listening to the sea." ■

Sources

Windows and glazing: *Fenevations*

Wood windows, cabinetwork: *Rising Sun Woodworking*

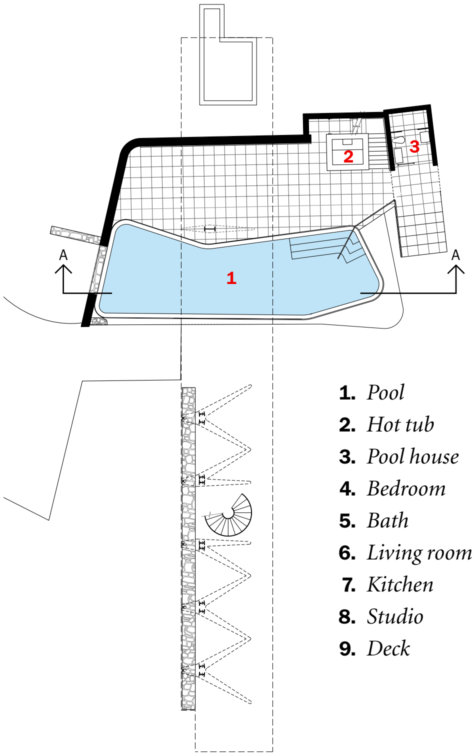
Hardware and cabinetwork: *D-Line Hardware*

Paint: *Benjamin Moore Paints*

Cork floor: *Expanko*

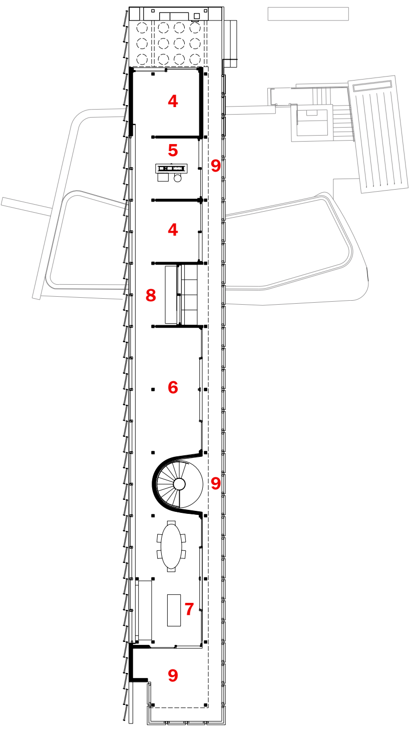
Terrazzo flooring: *Maurice Sedaka; Durite*

Furniture*: Lin Weinberg Galleries*

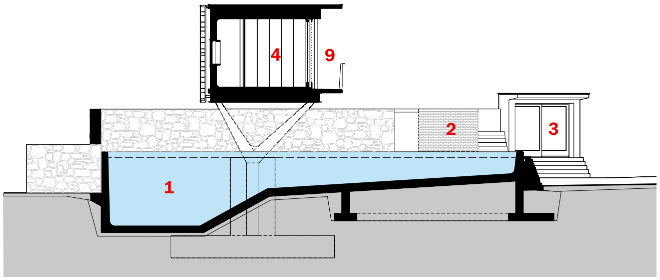


GUEST HOUSE FIRST FLOOR

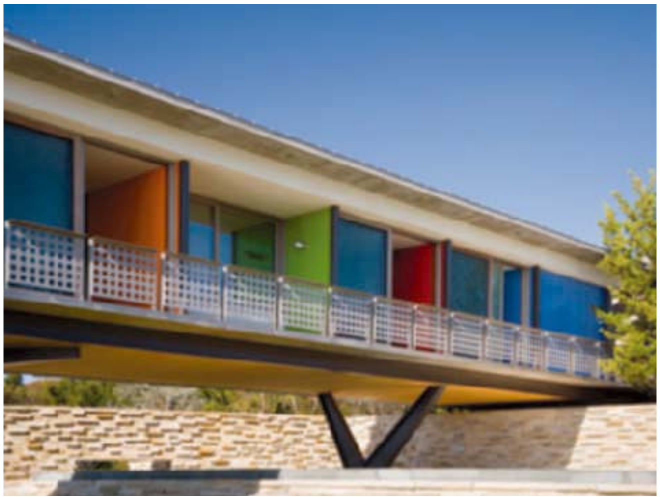
1. *Pool*
2. *Hot tub*
3. *Pool house*
4. *Bedroom*
5. *Bath*
6. *Living room*
7. *Kitchen*
8. *Studio*
9. *Deck*



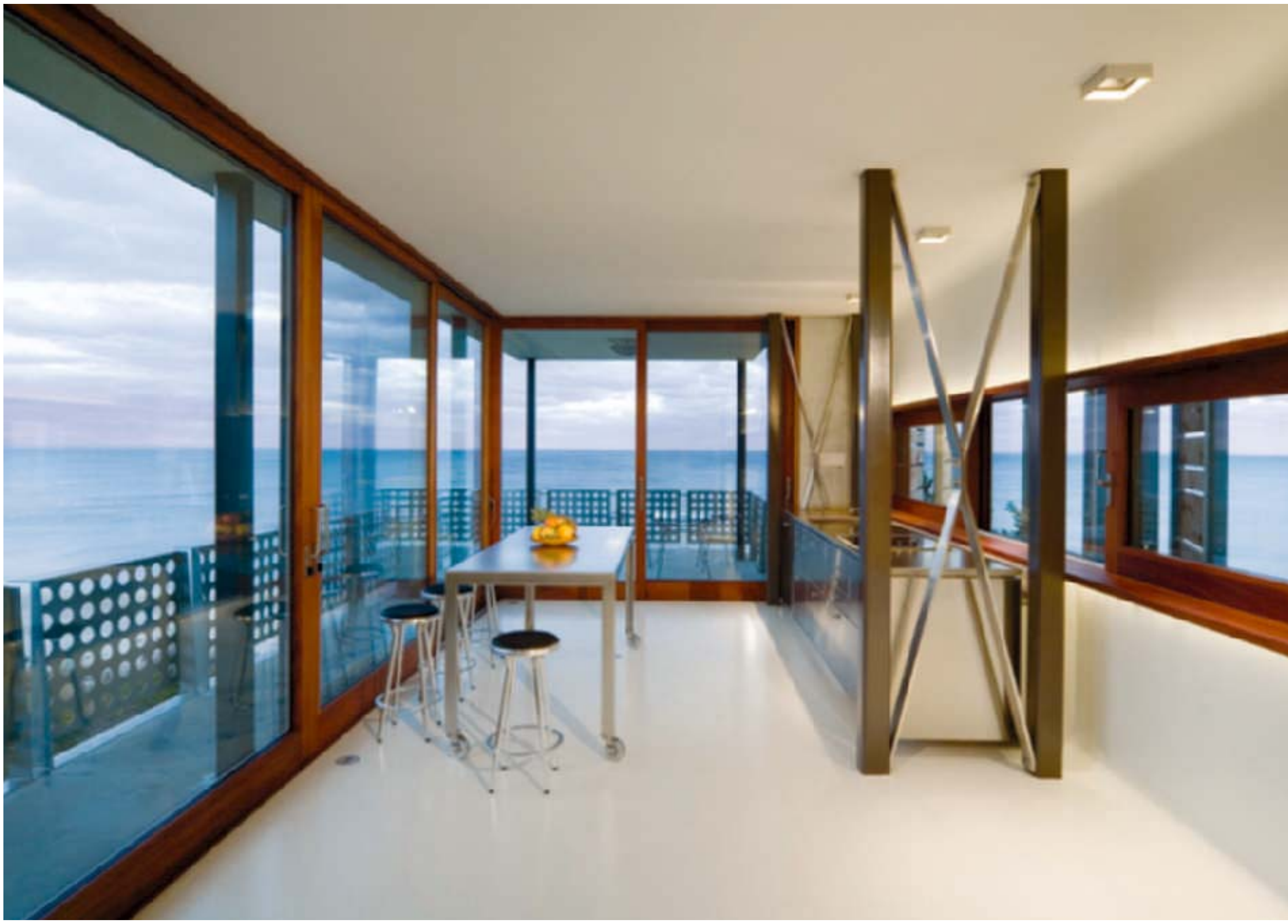
GUEST HOUSE SECOND FLOOR

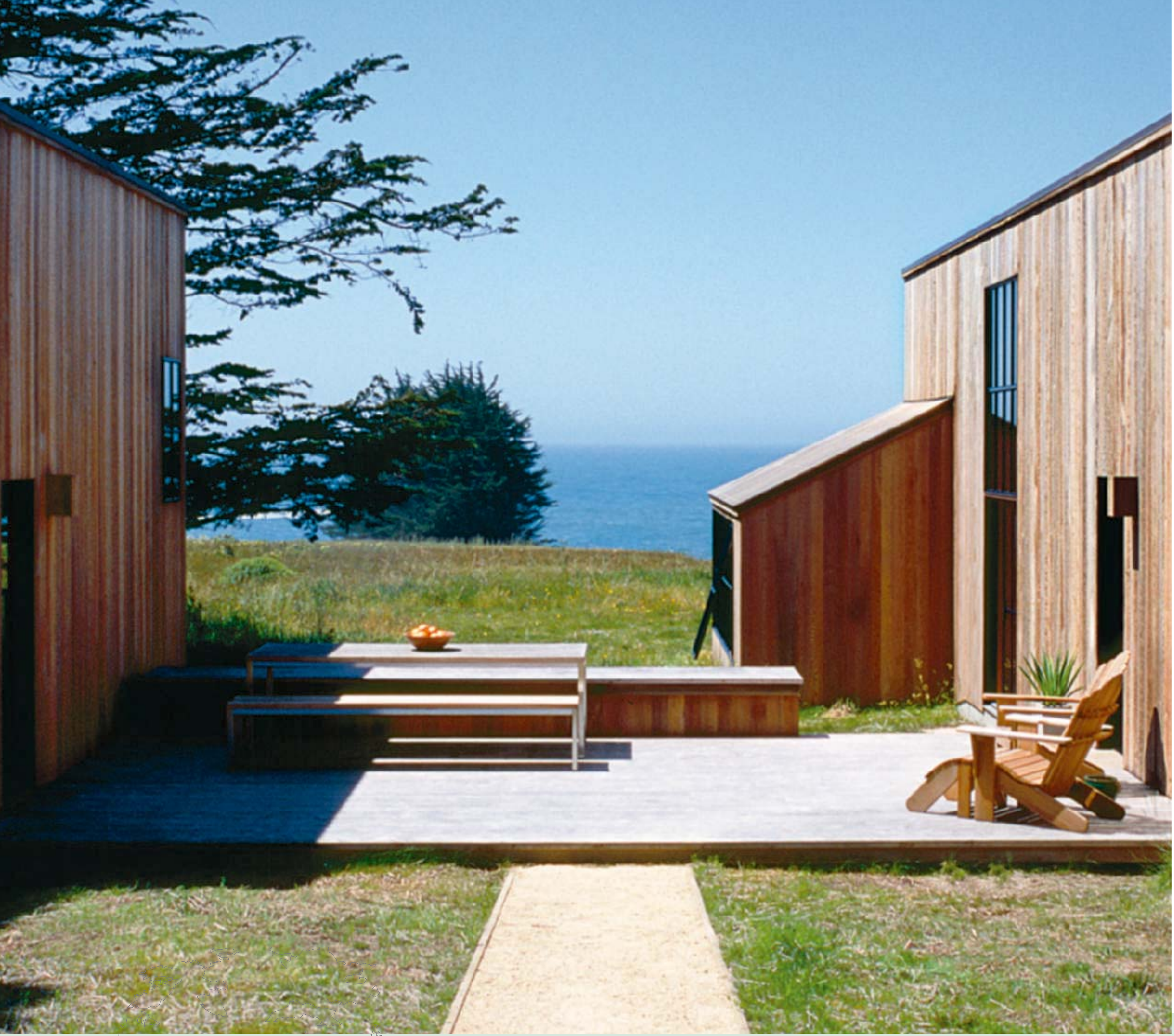


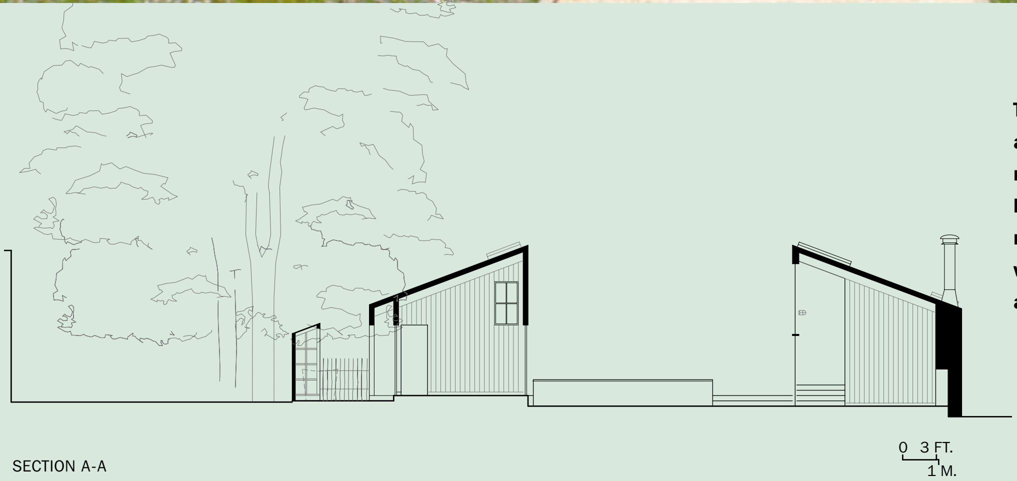
GUEST HOUSE SECTION A-A



The kitchen/dining area in the guesthouse overlooks the ocean (right). Whimsical beach-ball colors and motel style of the 1950s informs the compound's overall design aesthetic. Raising the guesthouse up one story (above right) was a way to create a gate to the compound and capture some extraordinary views—as well as screen out some less-desirable ones.



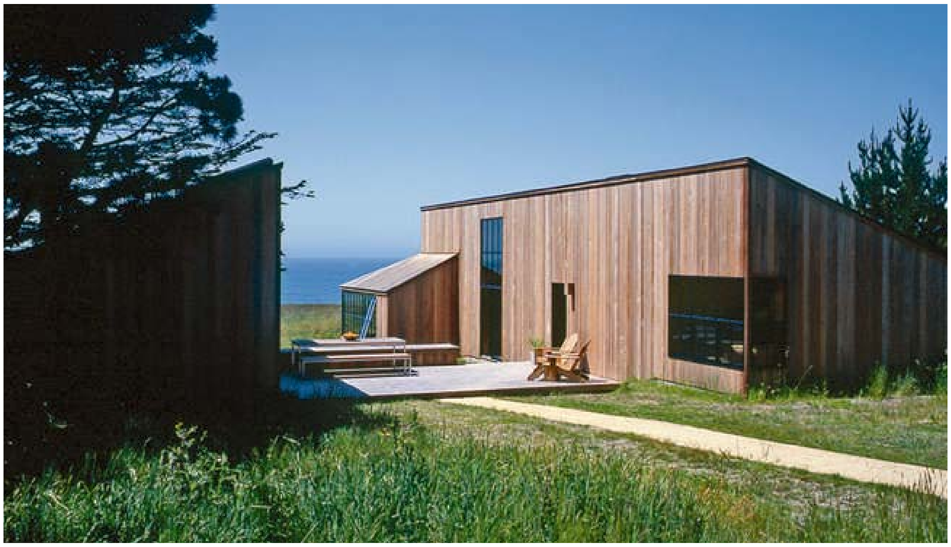




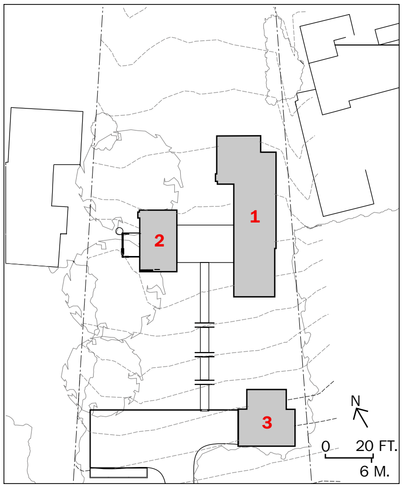
SECTION A-A

The deck serves as an arrival point, as a connection between the living/dining and bedroom buildings, and with its generous table, as the heart of daily life.

TGH's **Evans Residence** frames an ocean view



1. *Main living spaces*
2. *Privacy suite*
3. *Garage/studio*



Rather than being centrally located, the three structures of the residence face diagonally across their own lot out to the Pacific, permitting the meadow to flow through the site.

PHOTOGRAPHY: © JIM ALINDER

By Lisa Findley

Steep cliffs, crashing waves, and wild natural beauty characterize the coastal enclave of The Sea Ranch, 90 miles north of San Francisco. Even in summer, rolling fog and mist are more likely than sun, and the chilly onshore wind is a predictable afternoon visitor. As a result, houses here tend to be contained boxes with large windows and cozy fireplaces. Life takes place inside after brisk walks along the cliff tops or sweater-clad investigations of the pocket beaches. In the open meadows nearest the sea, most outdoor spaces consist of either inward-looking courtyards, gardens carefully sheltered by house or fence, or decks that embrace the view but are fitted with high glass walls.

It comes as a surprise, then, that the carefully composed Evans house sits on the bluffs at Sea Ranch. This compound of three modest buildings—a living/dining-room building, a master-bedroom suite, and a garage/studio building—with outdoor spaces connecting them, defies the pattern here. An unenclosed deck, with a view of the adjacent coastal meadow and the Pacific horizon, lies at its center. Across the yard on the landward side, the one-car garage and tiny studio combine to make a third building that straddles the redwood fence hiding the house from the road.

The house's focus around exposed outdoor space is not a result of naïveté about the conditions at Sea Ranch; in fact, quite the opposite. The architects, Turnbull Griffin Haesloop (TGH), are among those most familiar with the place. William Turnbull, who died in 1997, was the *T* in MLTW, the firm that in 1964 designed the progenitor of all Sea Ranch buildings, Sea Ranch Condominium 1. When MLTW dispersed, Turnbull stayed in San Francisco, and the firm now has dozens of Sea Ranch houses to its credit. "Our early buildings at The Sea Ranch were sealed like spaceships due to the wind and weather," says partner Mary Griffin, FAIA. "But we are now learning to compose buildings so that people can live outside."

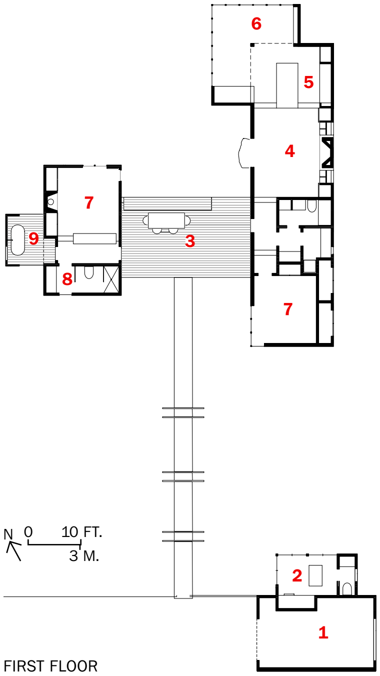
The Evanses purchased the last open lot wedged into a long row of already finished vacation homes. The slightly sloped site features a line of mature cypress trees along its eastern edge and, to the west, a dense thicket of native scrub planted by the neighbors to maintain privacy. "Our first instinct was to push the house as close to the cliff as the lot would allow," partner Eric Haesloop, AIA, recalls. "But we quickly discovered that by setting the buildings back, views of the houses on either side could be minimized." With this in mind, the architects carefully sited the three buildings and built a fence to complete the enclosure of the site.

Passing through the modest gate in this fence, visitors begin a carefully choreographed procession. First they take a narrow path that crosses the vegetation-lined yard and brings them to the deck and the view. To the west (or on one's right when standing on the deck looking toward the view), the beautifully detailed building with the main living spaces steps gently down the site, while its roofline holds even. As a result, the interiors unfold as a series of spaces with different proportions, from the intimacy of a sunny guest room at the top to a skylit bath next to it to an inward-facing living room below, and finally, to a soaring gourmet kitchen at the lowest level. The sequence ends at a great wooden table in a view-filled dining area that occupies what Turnbull used to call a "saddlebag" appended to one end of the building. Turnbull developed the

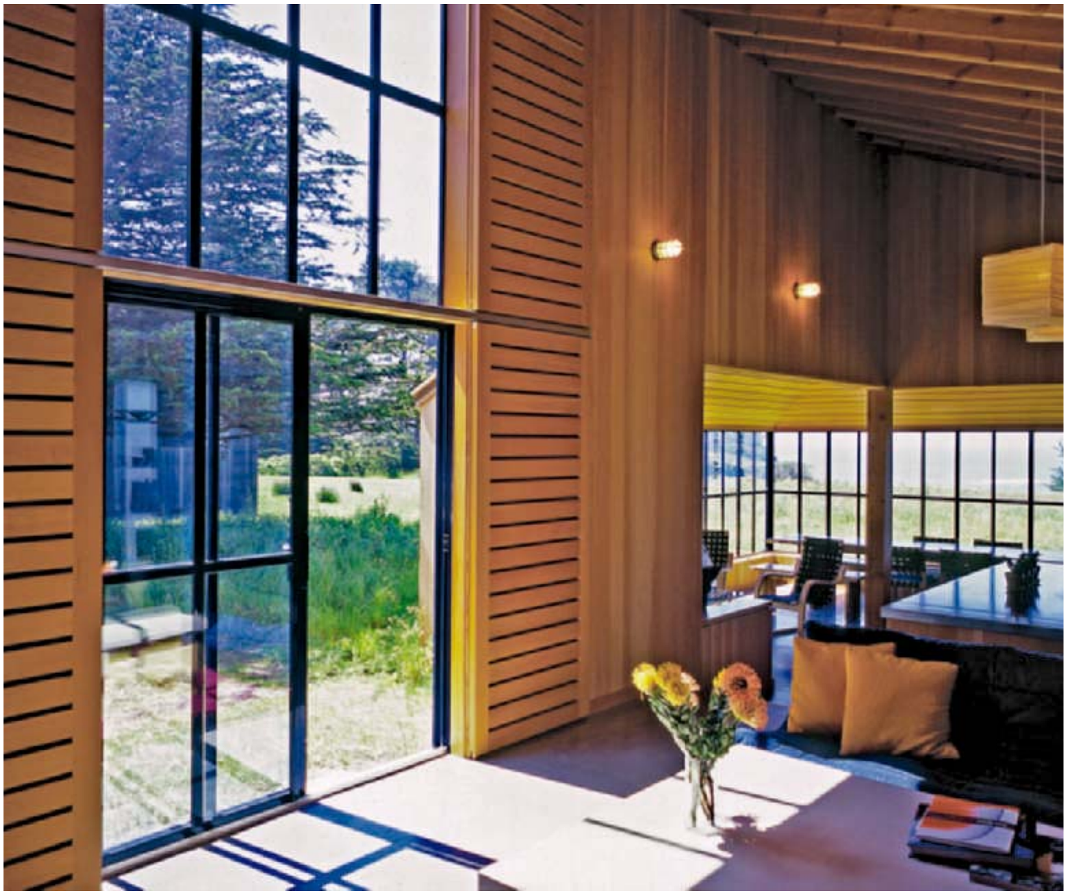
Project: *Evans Residence, The Sea Ranch, Calif.*
Architect: *Turnbull Griffin Haesloop Architects—Mary Griffin, FAIA, Eric Haesloop, AIA, design principals; Molly McGrath, project manager*
Interior designer: *Margaret Simon*
Engineer: *Fratessa Forbes Wong*
General contractor: *Timothy Carpenter*

Contributing editor Lisa Findley is an architect and teacher. She wrote the book Building Change: Architecture, Politics and Cultural Agency *(Routledge 2005).*

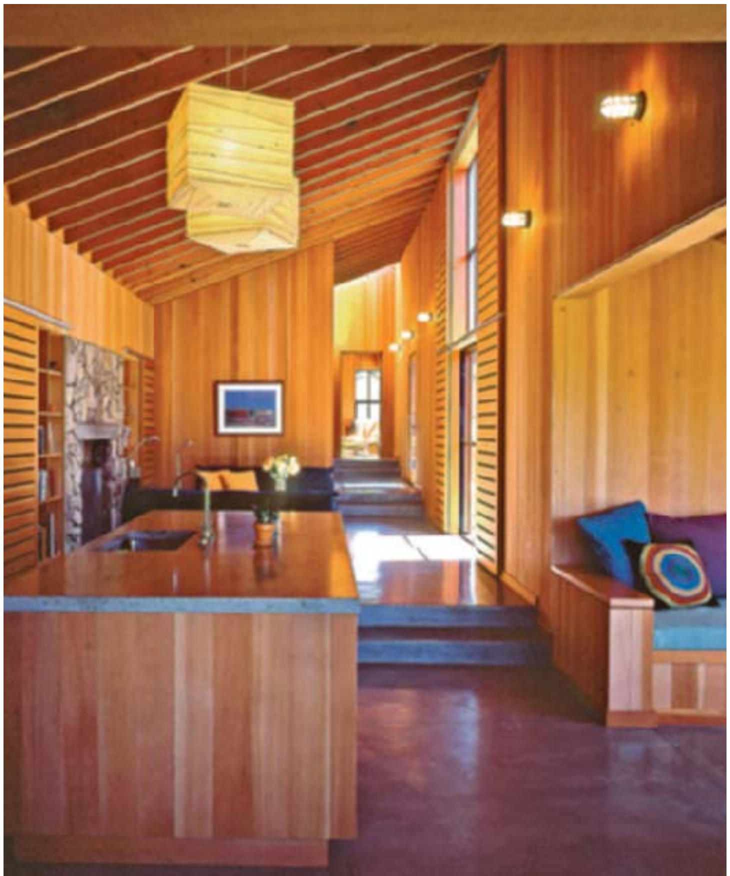
1. *Garage*
2. *Studio*
3. *Deck*
4. *Living room*
5. *Kitchen*
6. *Dining room*
7. *Bedroom*
8. *Bath*
9. *Outdoor tub*



FIRST FLOOR



In the building holding the public spaces, the dining-room/kitchen bay opens up in a long horizontal sweep to the bluff and ocean beyond (above), while the living-room area (below) displays an inward-facing perspective.



saddlebag as a reference to the vernacular architecture of California's north coast. On the outside, it looks like a lean-to, but on the inside, it works as a light-filled extension into the landscape. At the Evans house, the saddlebag blocks part of the scenery visible from the deck, making the view that remains all the more precious. The length of the saddlebag building shields the deck from the near-constant westerly wind, creating a protected microclimate for outdoor living.

Along the east edge of the site, the building with the master bedroom and bath nestles against and reinforces the row of cypress trees. Inside, steps follow the slope of the site leading from the bath to a lower sleeping area. An outdoor bathtub, sheltered by a tiny lean-to and low tree boughs, hides behind the master bedroom suite.

In the decade since Turnbull's death, Griffin and Haesloop have carried on his tradition of exquisite sensitivity to site and extraordinary craftsmanship, while evolving fresh ways to shape light, program, and space. Although modest in size and demeanor, the Evans house embodies a living legacy of architectural knowledge. ■

Sources

Metal windows and doors: *Bonelli*
Glazing: *Cardinal*
Hardware: *Schlage*
Interior ambient lighting: *Stonco Wall Lights*
Downlights: *BK Lighting*
Dining table: *Ed Clay Fine Furniture*
Concrete stained floor: *Scofield*

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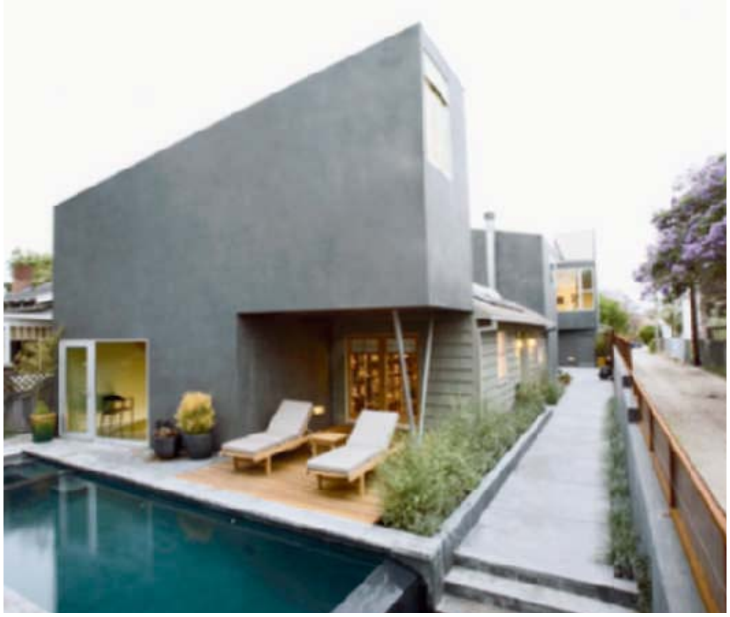
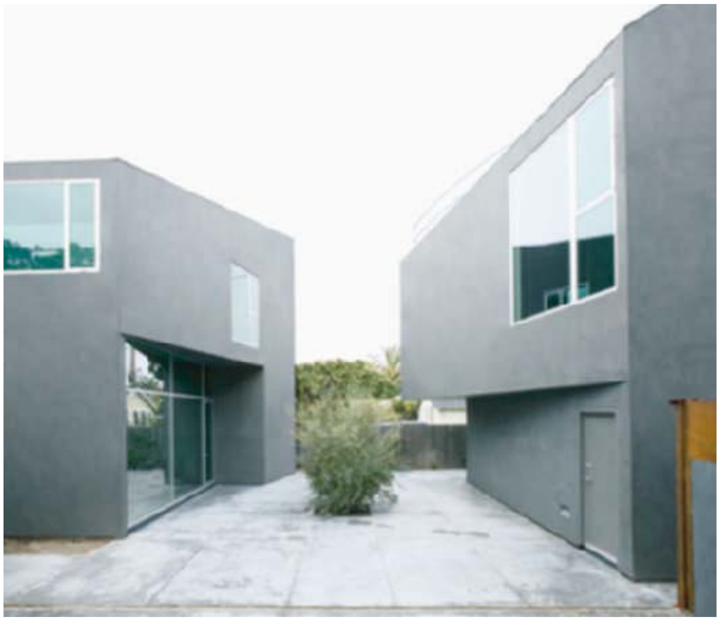
An asymmetrical collage named **1+3=1 House**





By Sam Lubell

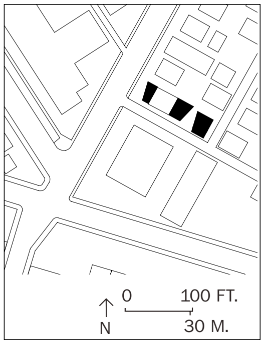
How do you triple the size of a house when it sits on a small lot in Venice, California? Young Los Angeles architects Steffen Leisner, Ali Jeevanjee, and Phillip Trigas faced this challenge when they collaborated on expanding a house for a couple living in a 970-square-foot, avocado-colored Venice bungalow with shingled siding and a gabled roof near Abbot Kinney Boulevard, the town's vibrant central drag.

The owners—a filmmaker and a multimedia artist—asked the architects to provide them with 2,500 square feet of new space on the bungalow's long, narrow lot, including living and office areas as well as an art studio and rental unit. Since the bungalow, which contains a kitchen and an entertainment area, had been renovated only five years before, there was no point in knocking it down and starting from scratch. Knowing that a large addition would dwarf the existing home, the architects added three multistory structures that distribute the new program around the site, making the existing bungalow a vital part of a new complex.

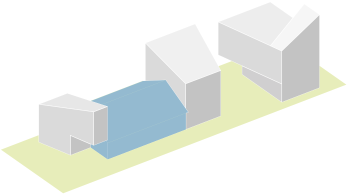
In front of the bungalow, which sits sideways on its narrow site, the architects built a 7.5-foot-wide, 26-foot-long, dark concrete pool, and added a 450-square-foot, two-story structure that includes a small, carved-out front porch, a work space, and a top-floor meditation studio. Behind the bungalow, the architects added a 1,000-square-foot structure that accommodates a sunken, 12-foot-tall living room, attached via an archway where they tore down the bungalow's east wall and a 160-square-foot second-floor bedroom. In the backyard, separated from the other two structures by a small, paved courtyard, they built a 1,065-square-foot building that contains a small, first-floor studio for renters, and a high-

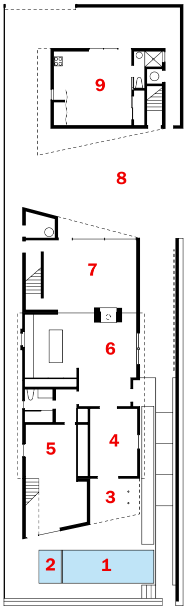
Sam Lubell is the editor of the California edition of The Architect's Newspaper. *He contributes regularly to* ARCHITECTURAL RECORD.

Project: *1+3=1 House, Venice, Calif.*
Architect: *Steffen Leisner, Ali Jeevanjee, Phillip Trigas*
Engineer: *David H. Lau & Associates*
General contractor: *Calasia Construction*

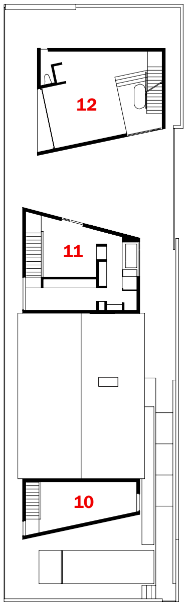


The facade of the front structure angles upward (far left in photo, above left, and drawing, below). The walls of the living addition that flanks the original house (in blue below) and the adjacent rental unit/art studio building both cant outward, helping shape the unique courtyard (above and below).



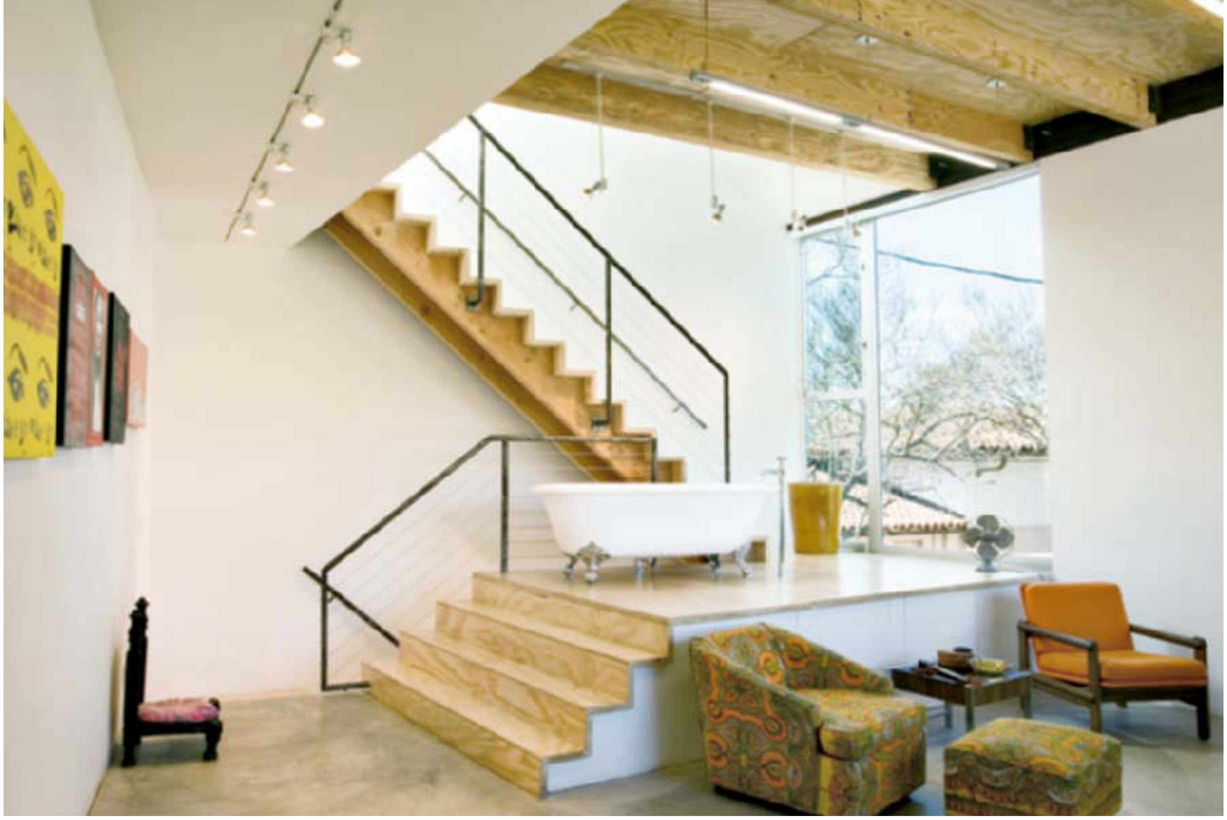


FIRST FLOOR

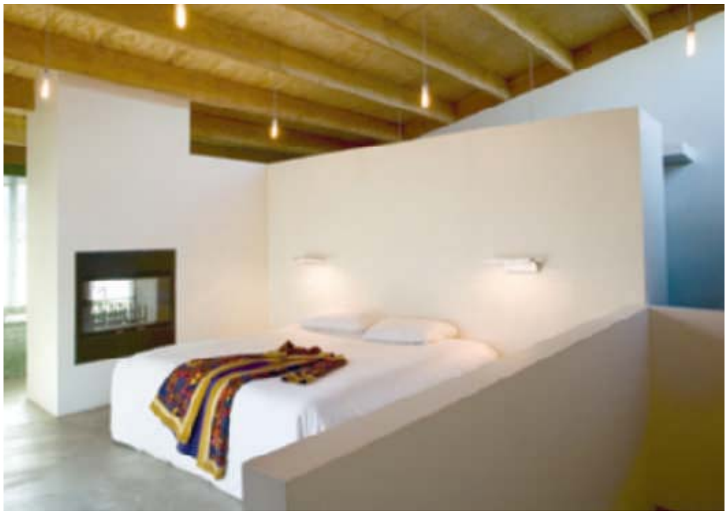


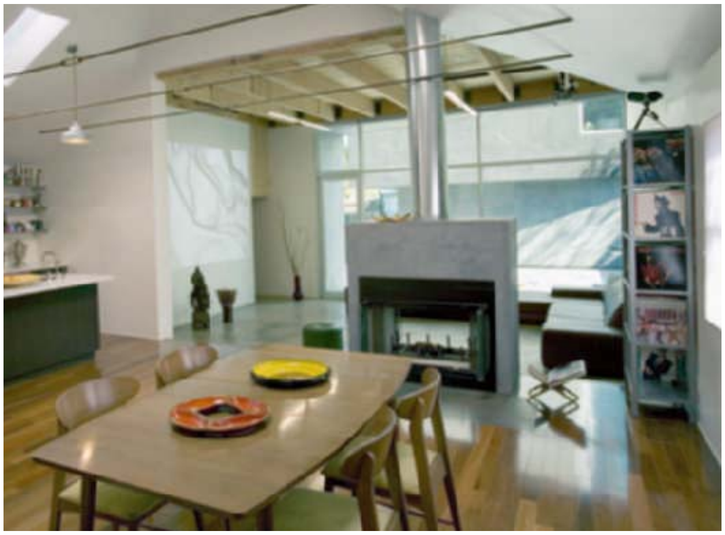
SECOND FLOOR

1. *Pool*
2. *Spa*
3. *Deck*
4. *Library*
5. *Office*
6. *Dining*
7. *Living*
8. *Courtyard*
9. *Rental unit*
10. *Meditation room*
11. *Master suite*
12. *Art studio*



The kitchen/dining room in the existing bungalow opens onto the living room (bottom). Tucked under a plywood ceiling, the second-story master bedroom suite resides in the addition at the back of the bungalow (below). The art studio is on the second floor of the back addition (right, with a functioning bathtub on the landing).





ceilinged, second-floor artist's loft. Above this, the architects provided the basic infrastructure for a rooftop lounge.

Spaces flow smoothly into one another: For example, the entrance hall and newly renovated kitchen in the existing bungalow open onto the new living room. A full-height window in the living room connects the space visually to the courtyard, while an open, wall-size window in the artist's loft offers views of the neighborhood.

By clearly differentiating the new structures, the architects complemented the bungalow rather than imitating it. In the process, they used a sophisticated modern palette of construction materials, specifying modestly priced items such as polished concrete floors, exposed plywood ceilings and doors, and greenish-blue windows with aluminum frames that kept the cost down to $700,000. The structures too are inexpensive: simple wood-frame construction with gray hard-trowel stucco walls.

The architects designed the unusual progression of indoor and outdoor spaces and the house's intriguing geometries to generate visual drama, expand the sense of space, and maximize interior daylight, says Leisner. They also needed to meet Venice's often-quirky building codes, which, among other things, call for several parking spots on the site. Steeply pitched corrugated-metal roofs above the new structures face in different directions, frame lofty views out, and create what looks like a miniature village in elevation.

While the differences in scale, shape, and color between the existing house and the additions can be jarring at first, they create a small urban collage that seems appropriate for the makeshift quilt that is Venice. "We started with a strong idea," says Leisner. "Then we threw in the constraints and let the design happen." ■

Sources

Exterior cladding: *La Habra*

Roofing: *Galvalume Plus*

Windows: *Metal Window Corporation*

Glazing: *Solarban 60*

Bathroom tile: *Bisazza*

Paint: *Behr*

Bath fixtures: *Kohler*

Toilets: *Toto*

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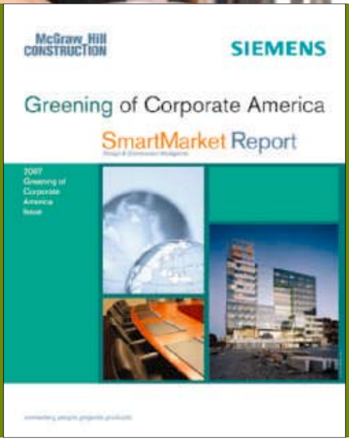

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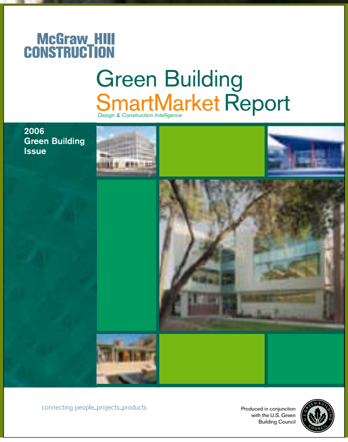

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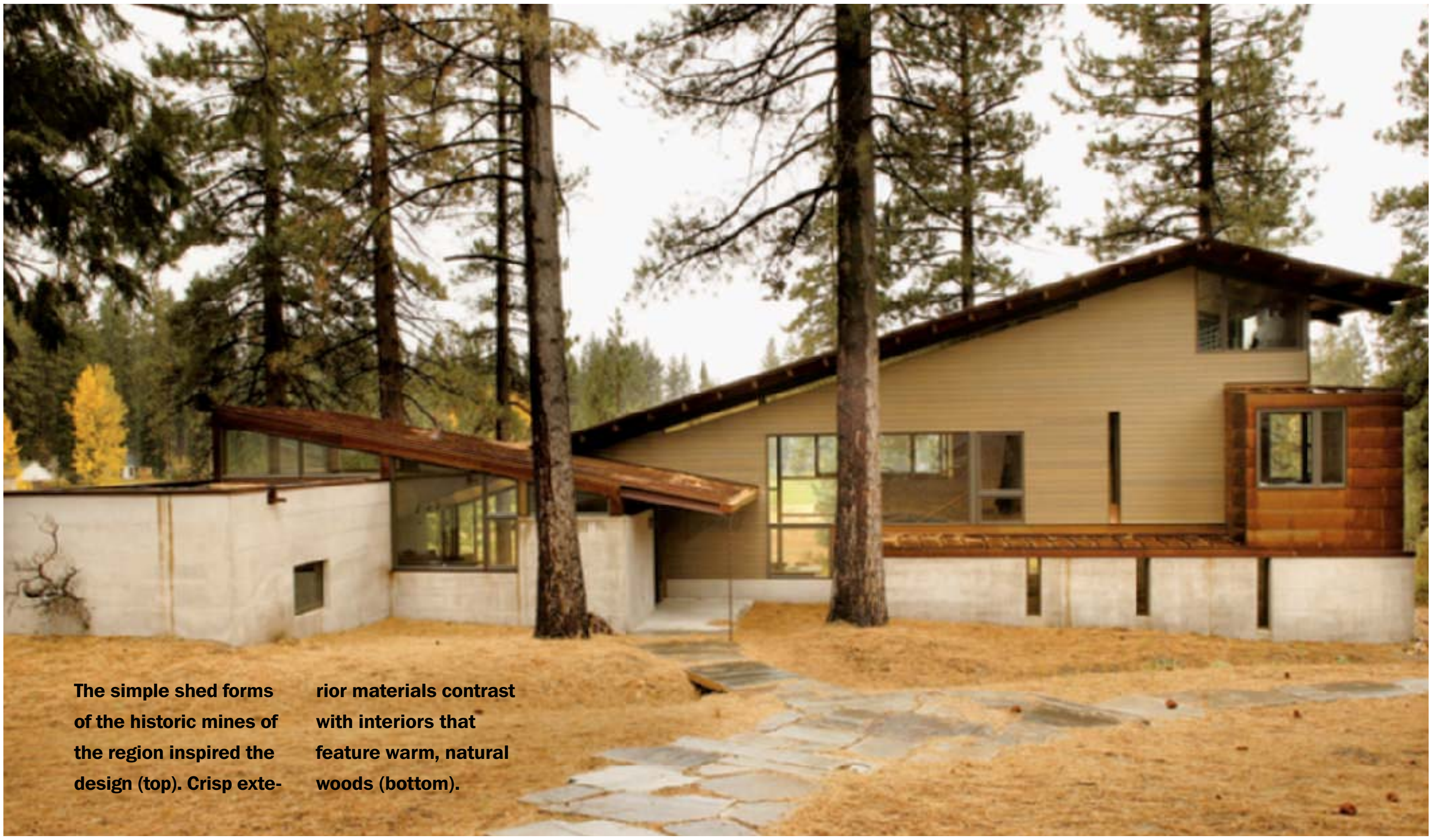
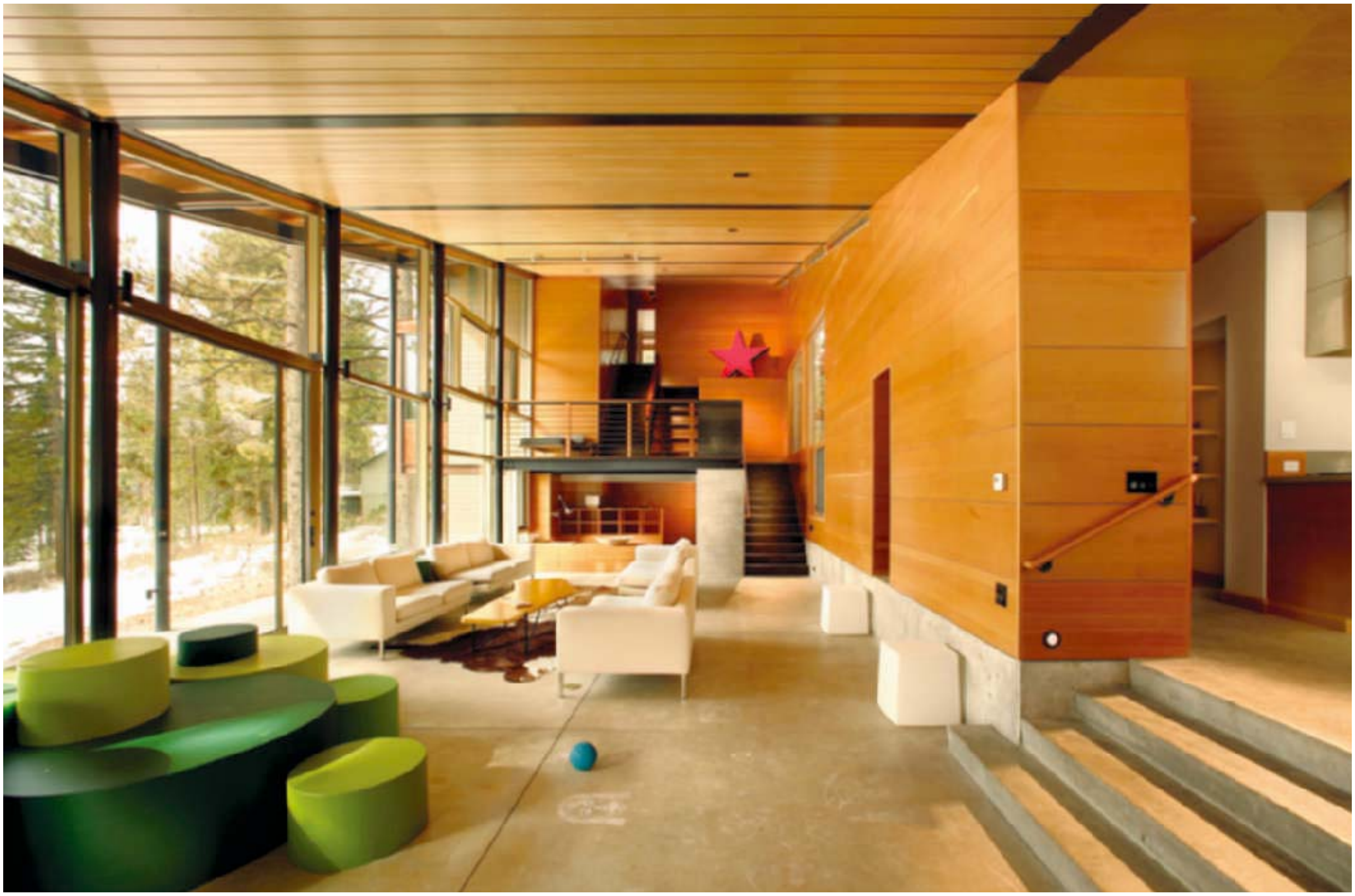




The simple shed forms of the historic mines of the region inspired the design (top). Crisp exterior materials contrast with interiors that feature warm, natural woods (bottom).

Lake/Flato Architects' **Lake Tahoe House** performs the duties of a camp compound for its owners

By Stephen Sharpe

The notion of a camp compound appealed to the project's client, an active family wanting to be outdoors as much as possible at their vacation home near the north shore of Lake Tahoe, Nevada. This underlying design concept allowed the architect, David Lake, FAIA, of Lake/Flato Architects in San Antonio, to spread out the program and divide its components among three buildings sited along the edge of the ¾-acre tract. The strategy also protected the site's most distinctive features, particularly its towering Ponderosa pines. "It was a way of preserving the character of the site and leaving as much open space as possible," says Lake.

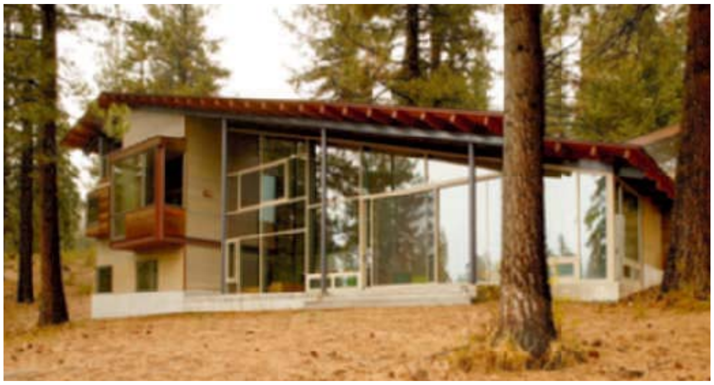
The multibuilding plan loosely forms a courtyard that slopes downward and culminates in a 2,950-square-foot, three-story main house, referred to as "the lodge," which consists of a kitchen; a large, open living/dining room; smaller reading rooms; and two bedrooms with separate bathrooms. The profile of the second building, a long and narrow garage/shop/playroom, mimics the incline of the hill and helps block views of the neighbors. An open arbor connects the garage building to the lodge, while a detached guest house, the third building in the set, sits on the other side of the lodge. Simple shed forms inspired by the old mining structures and small barns common to the region characterize all three buildings. Low-maintenance materials, including board-formed concrete, weathered cedar siding, and rusted Cor-Ten steel, make up the rugged exterior palette. Metal roofs, the typical snow-country "cold" variety that retains a blanket of snowfall as insulation, top the three buildings and ward off potential damage from wildfires.

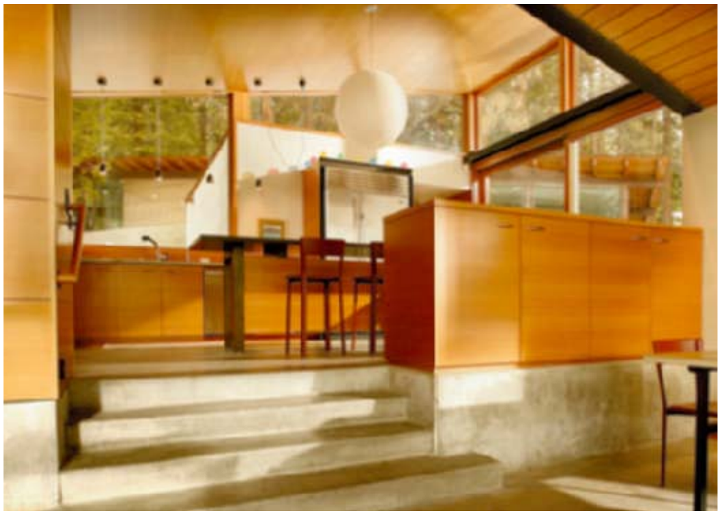
The main house (above right) anchors the compound. Inside, abundant glazing, concrete floors, and wall-to-ceiling wood paneling frame the kitchen/family room (right).

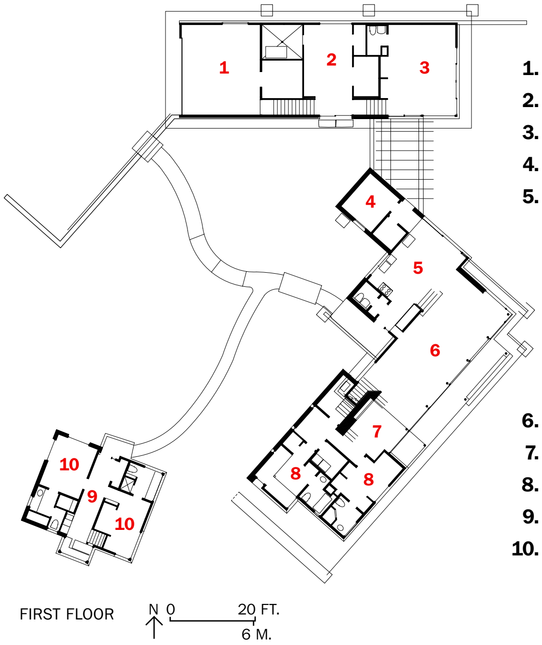
By breaking up the program, the architects also reduced the scale of the project, which encompasses 5,845 square feet of indoor space. The client didn't want a big house that might overwhelm the neighbors' modest-size residences, says Lake. The neighborhood, developed in the 1950s, represents a throwback in time compared to newer developments in the area. For example, homes built more recently tend to range from 12,000 to 15,000 square feet—significantly larger than his clients' buildings, says Lake. Standing about 5,500 feet above sea level and 800 feet below a ridgetop, the site is protected from north and northwest winds while also benefitting from ample direct sunlight. Lake describes the buildings as energy-efficient, designed with passive solar strategies that include south-facing glass and stained-concrete floors to capture the

Stephen Sharpe is the editor of Texas Architect.

Project: *Lake Tahoe House, Lake Tahoe, Nev.*
Architects: *Lake/Flato Architects—David Lake, FAIA, design principal; Billy Johnson, Tenna Florian, AIA; Heather Degrella, design team*
Engineers: *Datum Engineers (structural); Gray & Associates (civil); Electrotech (electrical); RHP Mechanical (m/e/p)*
General contractor: *Q&D Construction*







1. *Garage*
2. *Shop*
3. *Game room*
4. *Mudroom*
5. *Kitchen*
6. *Living/dining room*
7. *Inglenook*
8. *Bedroom*
9. *Entry hall*
10. *Guest bedroom*

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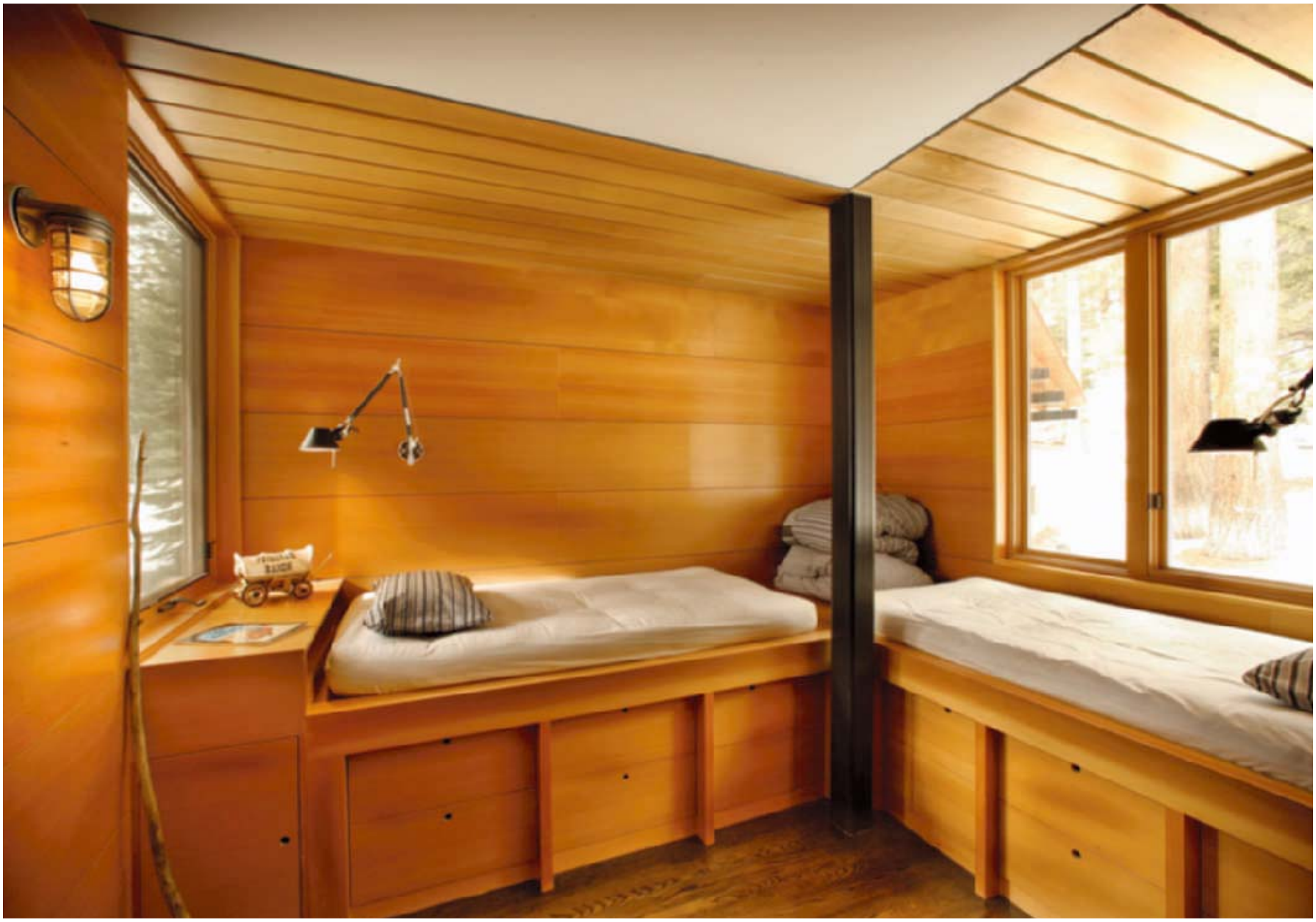
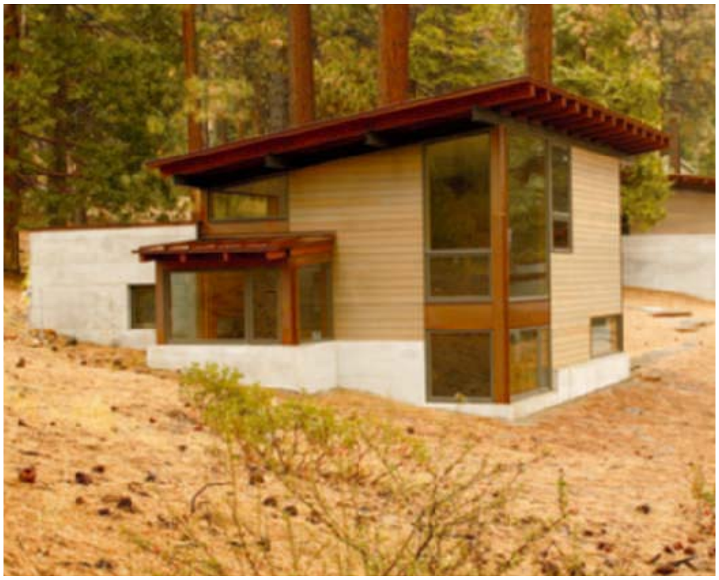


Small bedrooms feature bunk beds built into compact niches to accommodate children (above). The modestly scaled guest house sits apart from the main house (below).



abundant daytime sunshine that keeps the interiors warm during winter nights. Radiant heat in winter and open ventilation in summer keep indoor temperatures comfortable.

Modeled after a classic lodge, the main house serves as the primary gathering area. Even overnight guests bunking in the two smaller buildings can share meals in the central dining room. However, a small kitchenette in the guest house (915 square feet on two levels) allows visitors the option of making some of their own meals. "The design as a compound enables the owners to host lots of guests," Lake says. "Families can come and have their own privacy." The playroom in the garage building (1,980 square feet on one level) is a favorite place for kids to sleep, he says. Large rolling doors open the main house's living/dining room to the outdoors. And with its interior balcony, the central space doubles as a venue for staging theatrical productions put on by the youngsters. Intimate reading rooms offset these lofty living spaces. A private office on the third floor offers a crow's-nest view of the blue waters of Lake Tahoe ½ mile away to the south.

Getaways for this family fulfill the promise of year-round outings along the lakeshore and in the surrounding mountains. The clients' love of the outdoors, together with the limitations of a challenging site, drove the multibuilding design that emphasizes an active lifestyle. ■

Sources

Concrete floors: *L.M. Scofield*

Concrete countertops: *BJ Concrete*

Metal roofing: *RHP Products*

Sliding patio doors: *Albertini*

Interior finishes: *Dianda*

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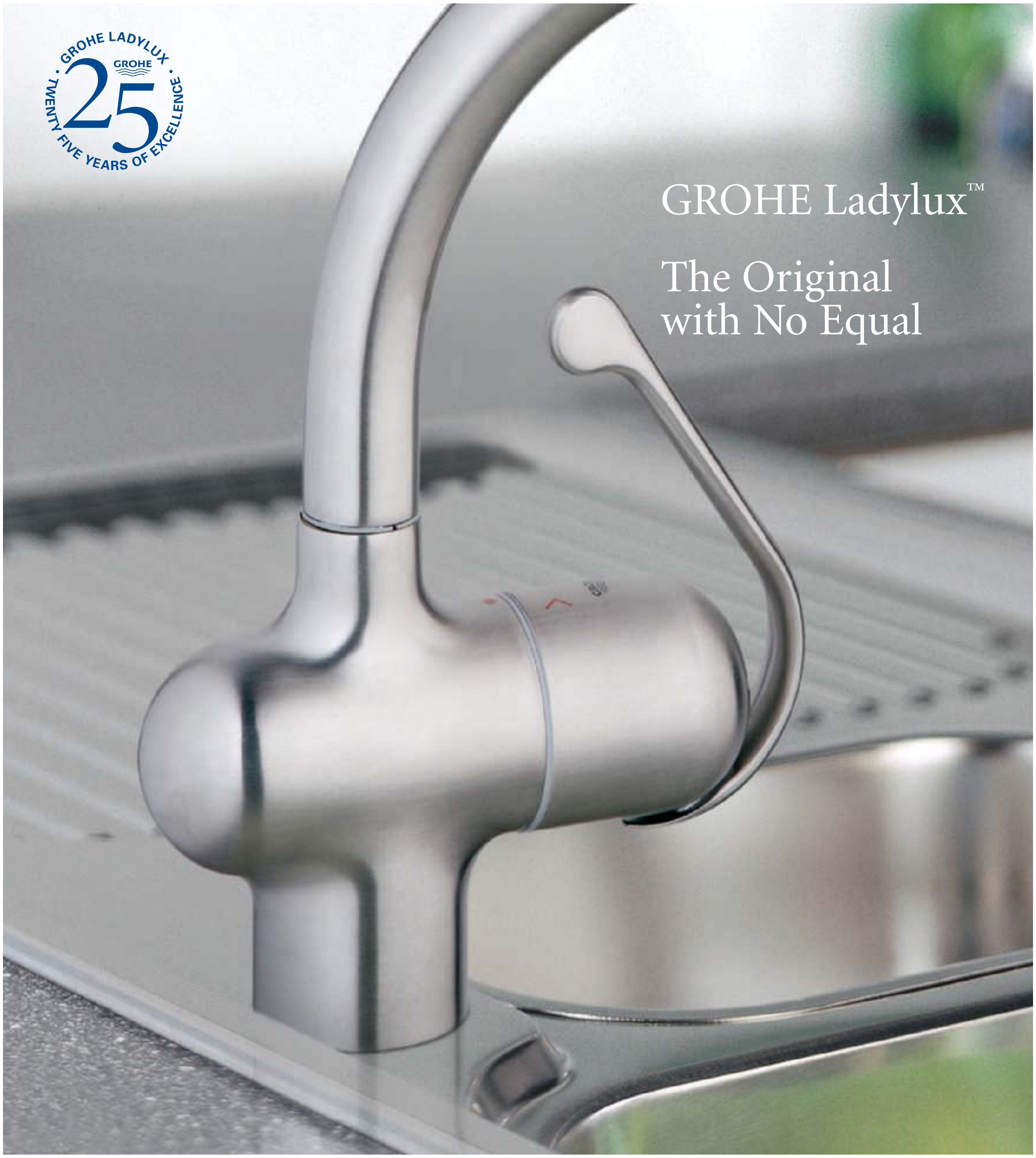

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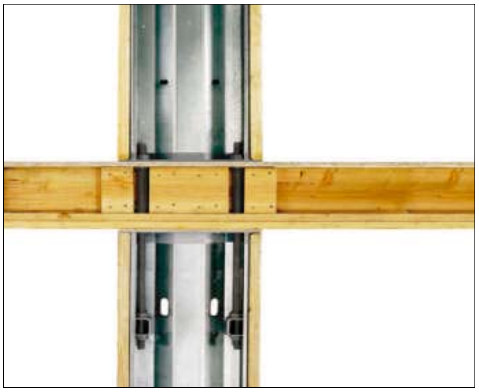
Residential Products

▲ Beaux-Arts breakfast

Designed in the United States and manufactured in Germany, the Beaux Arts kitchen system from SieMatic is intended to blend the contemporary European kitchen aesthetic with the more traditional and country American styles. The system is designed in segments: The cooking area, cleaning area, and prep areas are all separate. Depending on the segment, different dimensions, materials, and handles are used for surfaces and appliance and cabinet fronts. SieMatic, Feasterville, Pa. www.SieMatic.com **CIRCLE 206**

▲ Countertop necessity

Designed by Peter Arnell, the streamlined HomeHero fire extinguisher is meant to be kept in sight and in mind when a fire occurs. HomeHero's gauge is large and simple to read, and the instructions face the user when in use. HomeHero has the capability of being networked via a base unit to HomeHero smoke/CO detectors throughout the home, alerting the entire household in the event of a fire. Winner of a 2007 IDEA Gold Award, HomeHero is available exclusively at Home Depot this month. Home Hero, Atlanta. www.homehero.net **CIRCLE 207**



▲ Shrinking wall space solution

Simpson Strong-Tie's two-story, stacked Steel Strong Wall solution for narrow walls is an engineered, premanufactured shear wall made from steel and wood with an allowable load capacity between two and three times higher than the company's Wood Strong-Wall, offering some of the highest loads in the industry. The stacked wall design transfers the compression load through the nut and rod, reducing deflection under seismic load. Simpson Strong Tie, Pleasanton, Calif. www.strongtie.com **CIRCLE 208**

▲ Southwest flavor

Created exclusively to complement the design styles of the Southwest, Fypon's new Southwest Collection features 140 wood-grain SKUs, including faux beams, shutters, rafter tails, corbels, and knee brackets. The lightweight urethane pieces complement stucco finishes and add both rustic texture and a Southwest feeling to projects. All pieces come factory-primed in a neutral oatmeal color ready to be painted or stained. The collection's Mesa style offers a smoother look, while the Tahoe style gives a hammered, weathered appearance. Fypon, Archbold, Ohio. www.fypon.com **CIRCLE 209**

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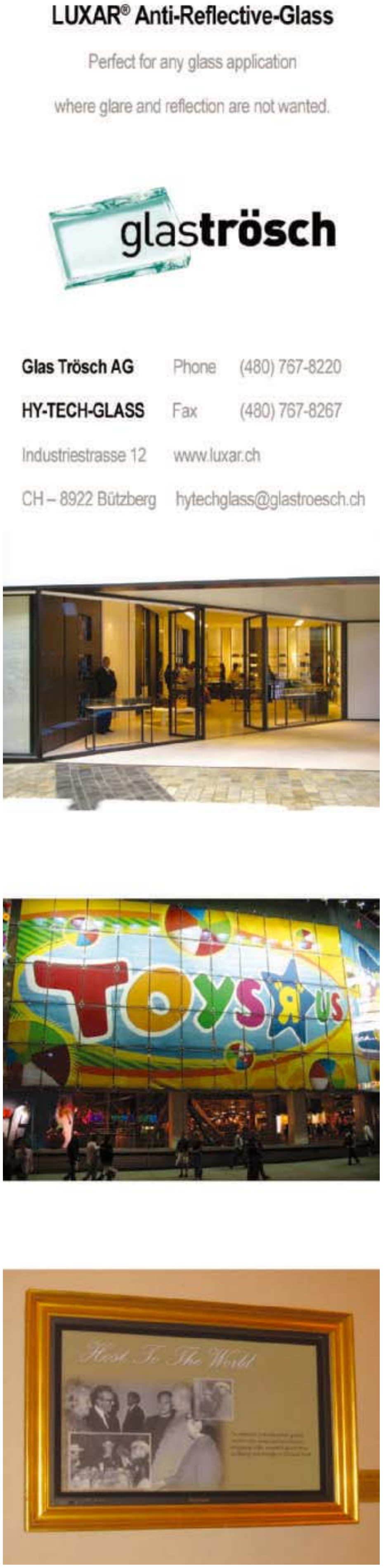
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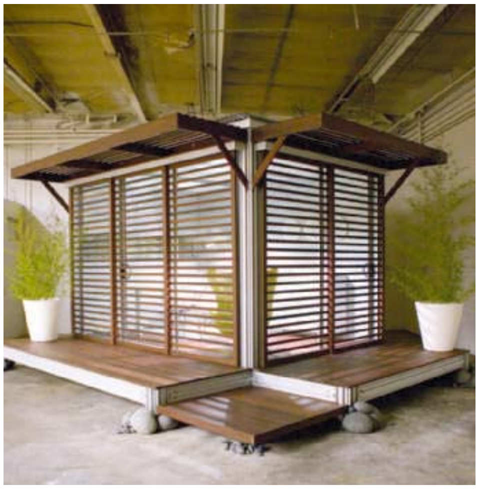
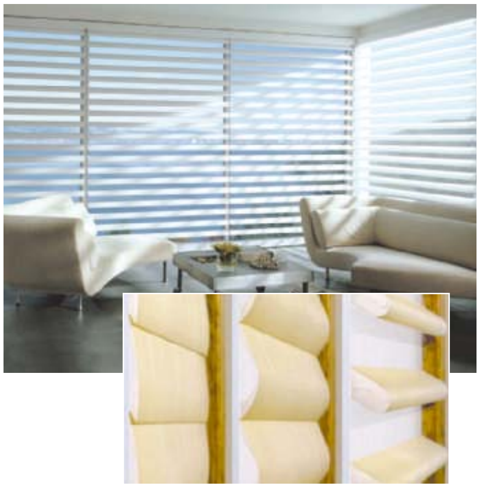


▲ Pretty fab retreat space

KitHAUS's 117-square-foot K3 prefab module is ideal for a backyard studio, office, playhouse, or yoga retreat. Designed on a raised adjustable footing, the $23,000 structure is delivered flat, precut, marked, and drilled, and can be erected in as little as two days on-site without heavy equipment or a concrete foundation. A permit is not required in most municipalities. The structure features SIP wall panels, dual-glazed low-E glass, and exterior cladding in Ipé wood or anodized aluminum. kitHAUS, Van Nuys, Calif. www.kithaus.com **CIRCLE 210**

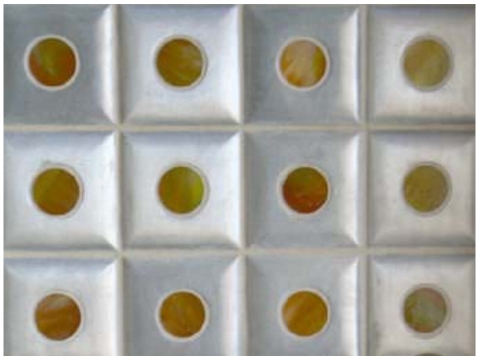


▲ Light squeeze

Pirouette window shadings offer soft fabric vanes that float in front of a fabric sheer. When opened, the top and bottom of each vane shift closer together in the back, creating a soft, outward fold and allowing light to filter gently through the fabric sheer. When closed, the vanes slide into a flattened position for light blockage and a smooth look similar to a classic window shading. Vanes can also be partially raised for a gently contoured look that still maintains privacy, or adjusted to different levels between open and closed for variable light control. Hunter Douglas, Upper Saddle River, N.J. www.hunterdouglas.com **CIRCLE 211**

▲ Concrete wall panels

Precast, insulated Superior Walls advanced foundation systems feature concrete wall panels that are custom made for each home with built-in openings for windows and doors. Pre-engineered access for wiring or small plumbing elements is included, as are smart stud facings for easy drywall installation. High-strength Xi wall panels have a concrete face shell backed by 2½" of Dow extruded-polystyrene insulation. Superior Walls, New Holland, Pa. www.superiorwalls.com **CIRCLE 212**



▲ Material connections

Designer Erin Adams and Mexico-based Alumillenium Tile collaborated on the design of the Luna collection of glass-and-metal tile. The tiles are made of recycled aluminum, and the oil used to heat up the metals during production is recycled car oil. The handcrafted tiles are available in sizes ranging from 1" x 6" to 6" x 6" and a variety of 36 colors. Aluminum tiles range from $100 to $160 per square foot; brass tiles range from $170 to $260 per square foot. Ann Sacks Tile & Stone, Portland, Ore. www.annsacks.com **CIRCLE 213**

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The SL70 system was used in an East Hampton, New York, residence (above and left) by Silberstang-Lasky Architects and (right) a Manhattan Motorcars dealership in West Hampton, New York, by Shawn F. Leonard, AIA.

Hurricane-resistant and thermally broken glass wall system gains AAMA approval

While NanaWall Systems' SL72 folding-glass-wall system is already Miami-Dade-rated to withstand hurricane-force wind, rain, and flying debris, the company has added another hurricane-resistant option to its line with the SL70 thermally broken system. The SL70, an aluminum folding system designed to provide an opening glass wall up to 36' wide, offers a thermally broken design tested to American Architectural Manufacturers Association (AAMA) hurricane standards.

According to NanaWall president Ebrahim Nana, the thermally broken design was added after customers requested a hurricane-approved system with better U-values for colder climates. The system is thermally broken with a ¾" polyamide plastic reinforced with glass fibers. The thermal barriers provide increased strength, superior humidity control, improved acoustics, and energy savings.

The system is ideal for the Eastern Seaboard, where both impact-resistance and cold weather issues arise. "We see there is a need in [places like] Long Island where projects are near the water and need to be energy-efficient," says Nana. "We are seeing it even as far south as Hilton Head, South Carolina, where they prefer AAMA standards."

NanaWall has successfully tested and passed the SL70 insulated hurricane-impact glass in both inswing and outswing applications for 53 stacking configurations with both the raised sill and saddle sill. Testing for large missile impact was conducted per ASTM E1886, and testing for cyclic pressure was conducted per ASTM E1996. The SL70 system has also received statewide approval in Florida. The system can be fully or partially opened with a swing entry/exit panel(s) option.

Thermal breaking does not add to the cost of the SL70 system, but making it hurricane-resistant doubles the price point compared to a nonapproved system. Nana warns architects to be wary of companies that try to save costs by claiming to have done testing but have not, or those that "rent" an approved products' Miami-Dade NOA (Notice of Acceptance) to gain a permit, and then swap out the units for cheaper options. He suggests architects check the Miami-Dade Web site, www.miamidade.gov/buildingcode, to make sure everything is valid. Nana Wall Systems, Mill Valley, Calif. www.nanawall.com **CIRCLE 214**

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Kolbe offers 99 impact-certified products in its line of K-Force impact windows and doors tested to meet or exceed the strict building codes of the high wind zones extending from Texas's Gulf Coast to Maine's North Atlantic seaboard. K-Force's impact-laminated glass and specialized glazing-retention system provides security without extra locks, unsightly brackets, or visible rods. Kolbe's Heritage Series wood, Classic Series clad products, and Ultra Series extruded aluminum-clad units can be specified with K-Force impact performance in casement, awning, and double-hung windows, and sliding and swinging doors. Kolbe & Kolbe Millwork, Wausau, Wis. www.kolbe-kolbe.com **CIRCLE 215**

◄ Impact-resistant curtain wall

The StormMax HR-250 and HR-251 impact-resistant curtain-wall systems from Vistawall have been engineered to meet the most demanding requirements of the South Florida and International Building codes. The HR-250 system has been designed to accommodate 9⁄16" to 5⁄8" insulated impact glass; the HR-251 impact-resistant curtain-wall system accommodates 1¼" to 1 5⁄16" insulated impact glass. Both systems offer a dry-glaze option for both large and small missile impact and are available with MS-375 impact-resistant entrance doors. Vistawall, Terrell, Tex. www.vistawall.com **CIRCLE 216**

► Impact-resistant sliders

Coastal-area builders and remodelers now have the ability to install impact-resistant vinyl-framed sliding doors in projects that reach up to 8' high and span an opening of 12' with Simonton StormBreaker Plus sliding impact vinyl doors. The sturdy doors come in two- and three-panel configurations and range in size from 5' x 6.8' to 12' x 8'. The doors are made with one pane of tempered glass and one pane of impact-resistant laminated glass. Simonton Windows, Parkersburg, W.Va. www.simonton.com **CIRCLE 217**

► Hurricane-tough blocks

Pittsburgh Corning's hurricane-impact glass-block system is specifically developed for new construction and renovation projects in hurricane-prone areas. The Thickset 90 glass block used with the Kwik'n Ez silicone installation system meets hurricane impact code requirements for residential and commercial buildings located in hurricane-sensitive areas. The block also provides all the benefits of standard glass block, including light transmission, privacy control, and security. Pittsburgh Corning, Pittsburgh. www.pittsburghcorning.com **CIRCLE 218**

◄ When the power goes out

Kohler Power Systems has added a 17-kilowatt, air-cooled standby generator (top left) to its home power products. The new Kohler generator is fueled by either natural gas or liquid propane gas. Kohler has also introduced the first and only combination load center and transfer switch package available for the residential standby power market with its new Intelligent Transfer Switch (bottom left). The two-in-one load center provides the owners of new homes with a generator-ready residence. Kohler, Kohler, Wis. www.kohlerpower.com **CIRCLE 219**

◄ Keeping out the weather

In response to customer demand, DuPont's StormRoom with Kevlar (left) is now available in customized and standard prebuilt sizes. StormRoom is an in-home storm shelter that can help safeguard families from the impact of hurricanes and tornados. DuPont Thru-Wall Flashing (below) is being introduced as a flexible, self-adhered membrane that can be used as thru-wall flashing, a surface-mounted flashing, or a transition membrane. It is made with DuPont Elvaloy, a copolymer that adds improved flexibility, weatherability, and UV-resistance. DuPont, Wilmington, Del. www.construction.tyvek.com, www.stormroom.dupont.com **CIRCLE 220**

For more information, circle item numbers on Reader Service Card or go to ***architecturalrecord.com/products/***.

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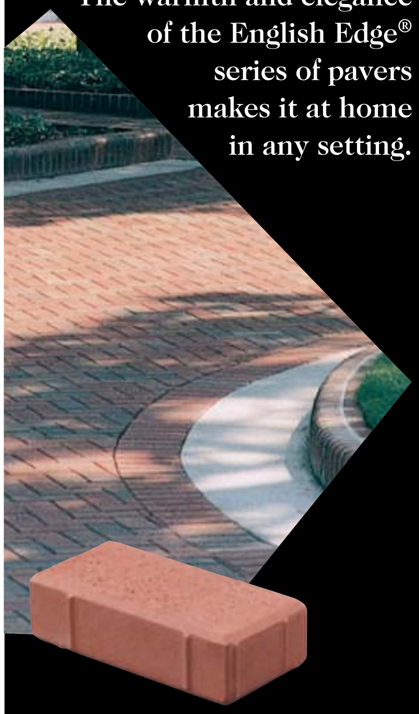
For more information on the StormMax line, e-mail StormMax@vistawall.com, or call 1-800-869-4567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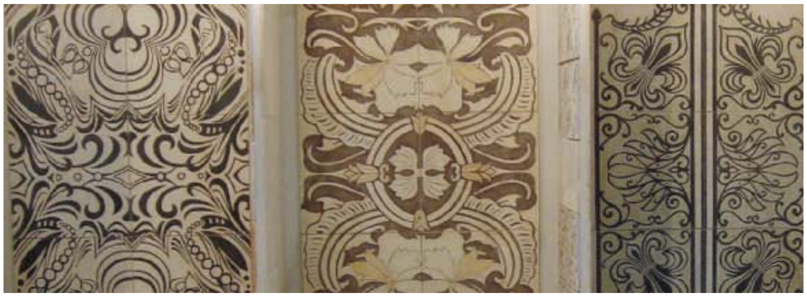
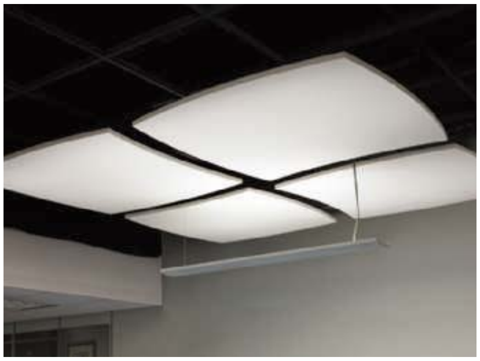


▲ Filipino finds

Based in Manila, but with offices in the U.S. and Canada, Coniex International exports a range of building products from the Philippines, including a line of wall plaques (above) that can be used either as interior wall decorations or as wall tiles in themselves. The plaques, produced exclusively for Coniex, are also available in custom designs. In addition to the plaques, the company carries Mactan stone tile and laminated tiles for residential or commercial projects, available exclusively from the Philippines. Coniex International, Buckley, Wash. www.coniexintl.com **CIRCLE 221**

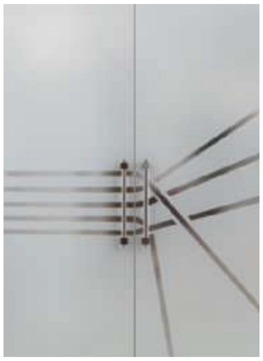


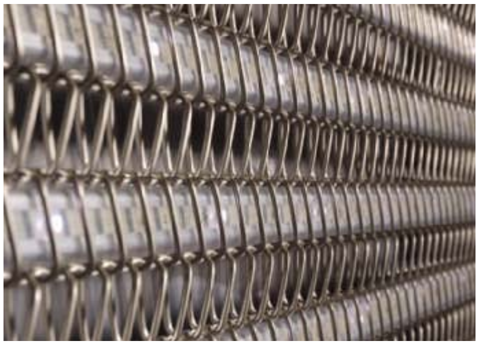
◄ Clouds on the horizon

The Armstrong Ceiling family of SoundScapes now includes 10 new standard shapes, ranging from squares and rectangles to circles, trapezoids, hexagons, and softly rounded contours. Designed for use in exposed structures and other areas that require improved acoustics, the new canopies can be installed as individual units or grouped together. The shapes are engineered for use in seismic zones, have a Class A fire rating, and a recycled content of 40 percent. Armstrong World Industries, Lancaster, Pa. www.armstrong.com/cloudsandcanopies **CIRCLE 222**

► Fire-rated doors with new etching process

Eco-Etch Doors is the most recent addition to the Forms+Surfaces line of fire-rated doors as well as the launch of a new ecofriendly process for creating etched designs. Using the largest physical etching system in North America, etched designs are applied to metal door faces with the company's advanced photolithographic bead-blasting system instead of with harmful acids or chemicals. The mask used to create each design is water soluble and removed using water alone. The doors are available in standard sizes up to 4' x 10' and with 45-, 60-, 90-, and 180-minute UL fire ratings. Shown here is the ECO201 stainless steel door with a polished finish. Forms+Surfaces, Carpinteria, Calif. www.forms-surfaces.com **CIRCLE 223**





◄ Mesh video screen

Cambridge Architectural has introduced two new visual enhancements for its metal fabric systems: Integrated LED and Integrated Lighting. Dubbed Mesh/FX, applications include the ability to wash a building in spectrums of light, display animated graphics, or use the building facade as an HDTV for advertising. With one method of integration, strips of LEDs are engineered to fit perfectly into the continuous horizontal and vertical channels of the mesh (left). Cambridge Architectural Mesh, Cambridge, Md. www.cambridgearchitectural.com **CIRCLE 224**

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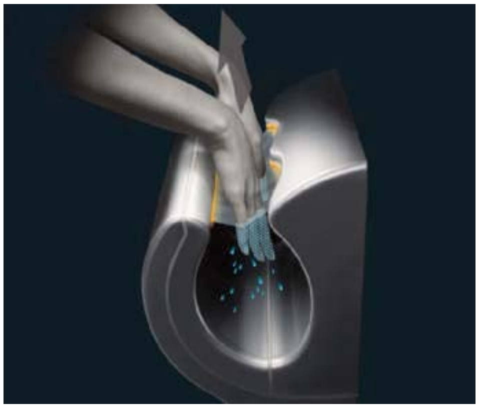
Product Briefs

► Color additions

Tarkett hired designer Karim Rashid to expand its SolidAir line of resilient flooring by creating 10 new colors in large-format, 16"-square tiles. The Karim Kolor tiles (right) are specially designed to withstand the demands of commercial settings. Tarkett has also expanded the existing ColorWorks system with the launch of 27 new colors in the Cortina line, ranging from vibrant Pistachio and Pomegranate to calmer Butternut and Natural Moon. In addition to the new colors, the line also features a new pattern of monochromatic coloration—a tone-on-tone visual that will provide a more striated look with richer color. Tarkett Commercial, Houston. www.tarkett.com **CIRCLE 225**

◄ Slim European frame

Introduced to the U.S. market last May, the strong and slim SteelBuilt Curtainwall system allows larger spans of glazing than traditional aluminum framing. The steel framing members have substantially lower deflection than aluminum, proving three times the wind-load capacity. In addition, the lower thermal expansion of steel allows greater design flexibility with fewer or no extension profiles. The system uses a plug-and-screw connection system for the framing components, which provides for crisp corner joints without a visible weld bend. Technical Glass Products, Kirkland, Wash. www.tgpamerica.com **CIRCLE 226**



► Wipe your hands, on a sheet of air

The Dyson Airblade, the latest invention by James Dyson, produces a 400-mph stream of clean air, blown through a gap no thicker than an eyelash. This sheet of air acts like an invisible windshield wiper, wiping moisture from hands, leaving them dry in 12 seconds. The Airblade uses a HEPA filter to remove more than 99.9 percent of bacteria from the air used to dry hands. It also features touchless infrared sensor technology and an antimicrobial additive coating to reduce bacteria and fungal growth. The dryer saves energy, as well, using up to 80 percent less energy than traditional hand dryers. Dyson, Chicago. www.dysonairblade.com **CIRCLE 227**

◄ Restroom door handle cleaner

Answering the prayers of public-bathroom germ phobes everywhere, the Hyso sensor-operated door-handle dispenser automatically releases a burst of cleaner on a door handle on a preset basis. The battery-operated dispenser is ideal for handles on public restroom exits and stalls, as well as doorknobs and handles in hospital patient rooms, assisted-living facilities, medical centers/labs, and school classrooms. The dispenser mounts inches above the target surface and only releases cleaner when the sensor detects users are out of range. The dispenser reduces the chance of cross-contamination that occurs when touching a germ-ridden surface after hand-washing. Sloan Valve Company, Franklin Park, Ill. www.sloanvalve.com **CIRCLE 228**

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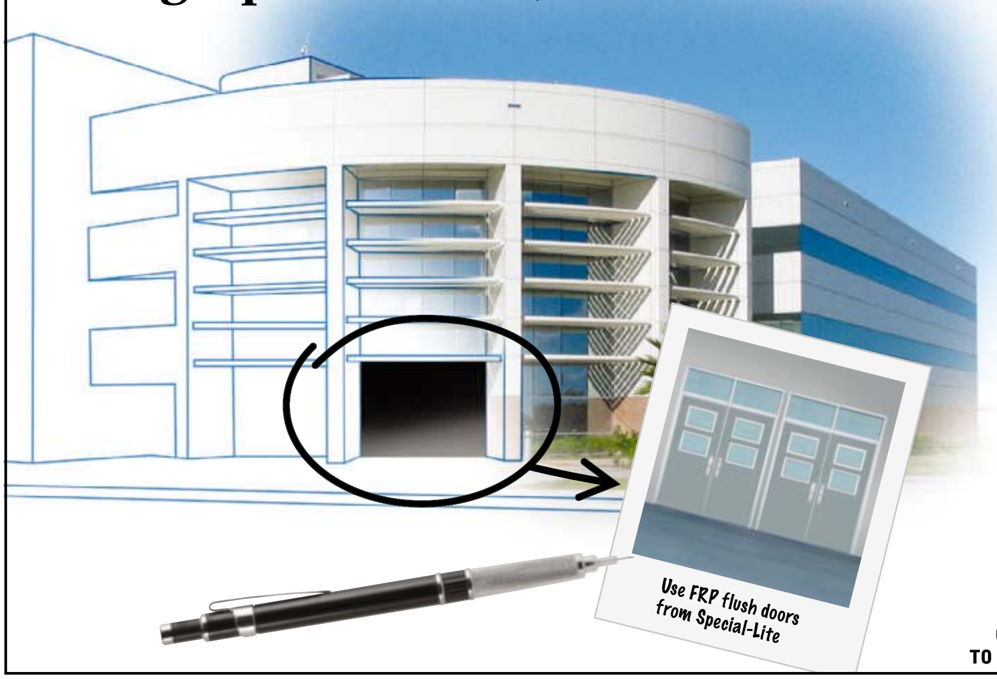

Specifying run-of-the-mill entrance systems in your exterior openings can leave holes in your best green designs. But when you choose flush doors that eliminate regular repainting, don't off-gas VOCs, and provide a good thermal barrier, they can help you earn LEED points—and make points with facility owners, too.

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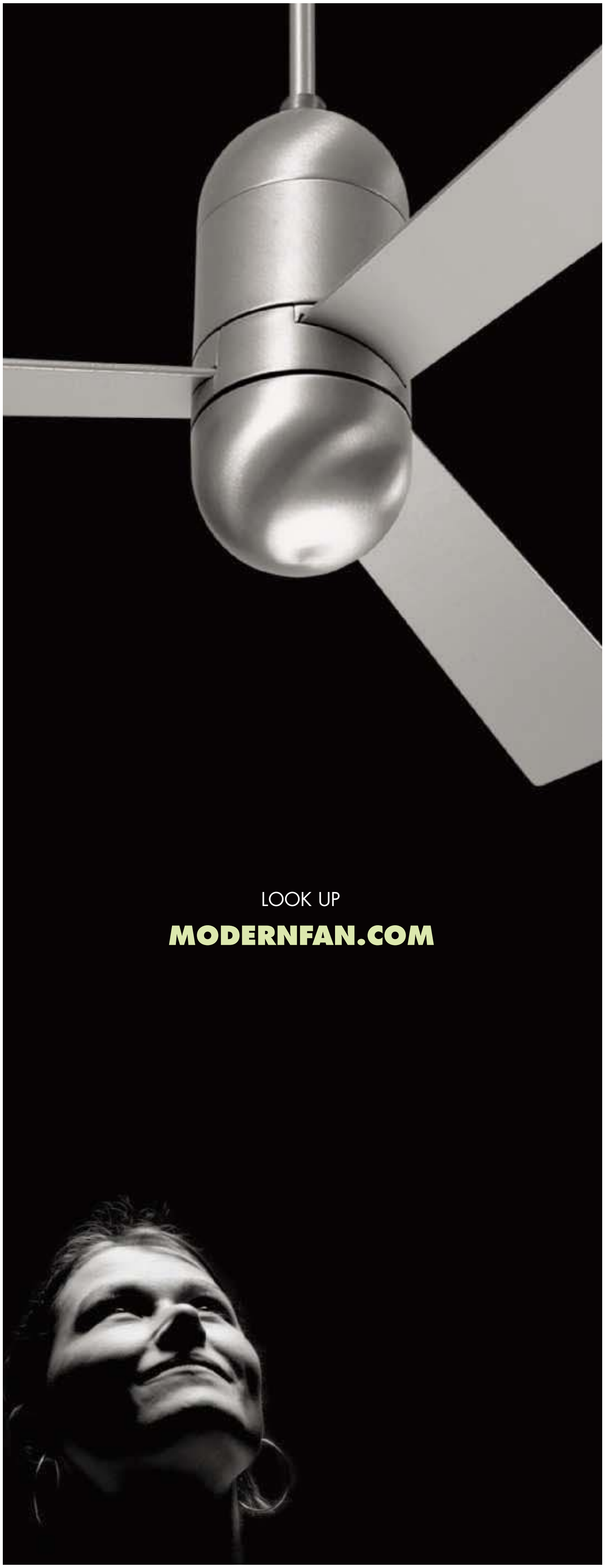

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Dates & Events

New and Upcoming Exhibitions

Architecture for Humanity: Gulf Coast Reconstruction Projects
St. Louis
October 13, 2007–January 26, 2008
This exhibition features a selection of residential designs, created under the auspices of the not-for-profit humanitarian group Architecture for Humanity, for displaced Gulf Coast communities like Biloxi, Mississippi, following Hurricane Katrina in 2005. The exhibition includes seven projects, some of which are already in construction, by architects from across the country. At the Bernoudy Gallery of Architecture. Visit www.thesheldon.org/galleries.

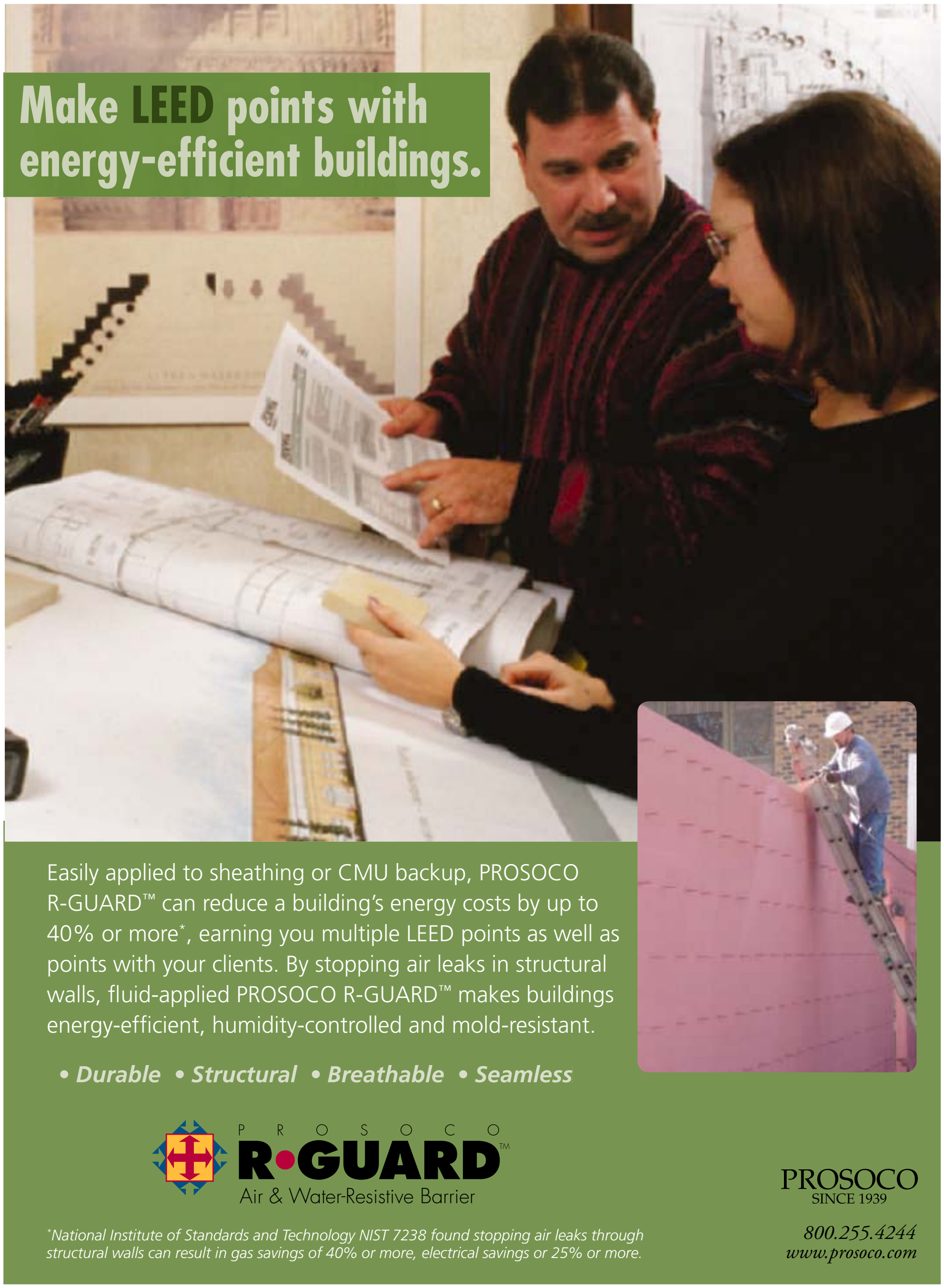
Michael Maltzan:
The Dark Side of the Moon
Los Angeles
October 19–December 9, 2007
This new site-specific installation by the Los Angeles–based firm Michael Maltzan Architecture introduces a new threshold in the gallery, creating a space between two worlds that provokes interaction and a simultaneous experience for, and between, those who visit. At SCI-Arc. Call 213/613-2200 or visit www.sciarc.edu.

Eero Saarinen: Shaping the Future
Bloomfield Hills, Michigan
November 17, 2007–March 30, 2008
Traveling from Europe, this exhibition is the first retrospective of the life and works of one of the more celebrated designers of the Modern era. Saarinen is best known for his postwar masterpieces, including the 630-foot tall stainless-steel St. Louis Gateway Arch, the TWA terminal at New York's John F. Kennedy Airport, numerous university campus plans and buildings, and the General Motors Technology Center near Detroit. At the Cranbrook Art Museum. Call 248/645-3323 or visit www.cranbrookart.edu/museum or www.eerosaarinen.net.

Ongoing Exhibitions

Lost Vanguard: Soviet Modernist Architecture, 1922–32: Photographs by Richard Pare
New York City
Through October 29, 2007
This exhibition examines Soviet avant-garde architecture in the post-revolutionary period. It highlights 81 photographs by architectural photographer Richard Pare, who made eight extensive trips throughout the former USSR between 1992 and 2002. Pare created nearly 10,000 images to compile a timely documentation of these structures, which are now in various states of decay, transformation, and peril. At the Museum of Modern Art. Call 212/708-9400 or visit www.moma.org.

Farnsworth House Tour
Chicago
Through October 2007
A comprehensive bus tour featuring Farnsworth House and other significant works by master architect Ludwig Mies van der Rohe is offered by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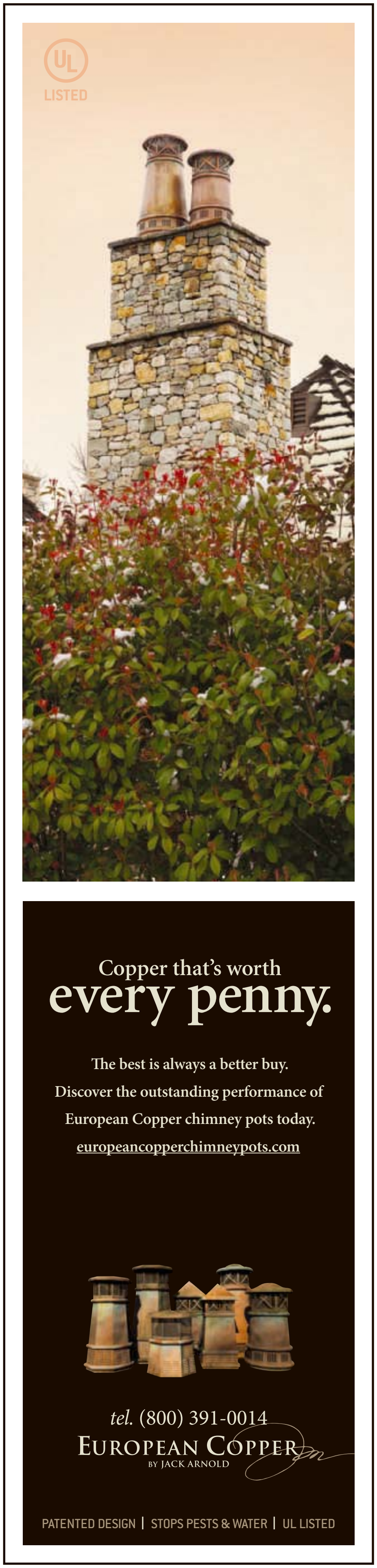
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The Chicago Architecture Foundation (CAF). The 7-hour tour includes lunch and stops at the apartment buildings at 860-880 N. Lake Shore Drive and the IIT campus buildings. Visit www.architecture.org.

Lectures, Conferences, and Symposia

Sustainable Architecture Lunchtime Lecture Series
Chicago
October 9–December 6, 2007
Another free lecture series open to the public, covering subjects such as energy efficiency with doors and windows and green home remodeling. At the Chicago Architecture Foundation. For more details, call 312/922-3432 or visit www.architecture.org.

Traditional Building Exhibition and Conference
New Orleans
October 16–20, 2007
This is the largest trade show in North America dedicated to historic restoration and renovation and to new construction in traditional styles. It will be the first design and construction show to return to New Orleans since hurricanes Katrina and Rita. At the Ernest N. Morial Convention Center. For more information, call 866/566-7840 or visit www.traditionalbuildingshow.com.

AIA150
Full Spectrum Practice: An AIA Housing and Custom Residential Knowledge Community Symposium
Chicago
October 19–21, 2007
The symposium will focus on the essential techniques of business planning and marketing for custom residential design firms. To better illustrate the principles at hand, presenters will focus on business growth opportunities in sustainable design and digital home technology. At the Hotel Allegro. Visit www.aia.org/cran.

Women in Modernism—Making Places in Architecture
New York City
October 25, 2007
"Women in Modernism" explores the roles that architectural arbiters have had and continue to have in shaping the history, and defining the legacy, of Modern architecture in the United States—a process that has fundamentally

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ignored the contributions of women. Curators, architects, historians, and critics will address the process of selection and the values they employ each time they design a course or exhibition, or publish a book or article. At The Celeste Bartos Theater, Museum of Modern Art. For more information, call 212/708-9400, visit www.bwaf.org/events or www.moma.org.

Architect as Developer
Los Angeles
October 28
Jonathan Segal, FAIA, will host a seminar presentation in Los Angeles to explain the role of the architect as developer. He will highlight case studies from his own work, walking attendees through the entire process from start to finish, including how to develop a single-family residence, how to develop a multifamily rental project, title insurance, proformas, bank financing, insurance, permanent take-out financing, and construction contracts. Seating is limited. Visit info@architectasdeveloper.com to learn more.

Competitions

Solar Decathlon 2007
Washington , D.C.
October 12–20, 2007
The Solar Decathlon consists of 20 university teams competing on the National Mall to design, build, and operate the most attractive and energy-efficient solar-powered home. This year, teams have been selected from the United States, Puerto Rico, Germany, Spain, and Canada. On the National Mall. Form more information, visit www.solardecathlon.org.

Portland Courtyard Housing Competition: Creating Spaces for Families, Community, and Sustainability in the City
Deadline: October 24, 2007
This competition will explore possibilities provided by housing oriented to shared courtyards as an additional infill housing type for Portland, Oregon. Architects, landscape architects, builders, developers, students, and others interested in the competition are eligible. Multidisciplinary teams are encouraged. Visit www.courtyardhousing.org.

Benjamin Moore Hue Awards
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once again is conducting a search among North American architects and interior designers for those who have brought color to their work in the most respectful, novel, and celebratory ways, and will honor the best of the best with its Hue Awards. Visit www.benjaminmoore.com.

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2007 AIA Florida Emerging Professionals Design Problem Competition

October 26–27, 2007

A two-stage open competition focused on the design, socioeconomic, and environmental issues associated with Mass Transit on the West Coast of Florida. The core of the design problem is the design of a prototypical light rail station for the Sarasota region. Stage 1 submissions will be reviewed and discussed by a panel of jurors as part of the 2007 Emerging Professionals Conference. Visit www.aiafla.org.

The Buckminster Fuller Challenge

Deadline: October 30, 2007

Established to catalyze the vanguard of a global design revolution, the Challenge will award a single $100,000 prize annually to support the development and implementation of a solution with significant potential to solve the world's most pressing problems in the shortest possible time while enhancing the Earth's ecological integrity. Visit www.challenge.bfi.org.

2nd Annual Student Design Competition

Intent to Compete Submittal Deadline: October 30, 2007

Deadline: January 16, 2007

The Architectural Commission of the United States Institute for Theatre & Technology (USITT) is holding its second annual competition to design an "ideal theater" on an academic campus. The competition is open to any architecture or theater student at an accredited U.S. college or university. Visit www.usitt.org.

2G Competition: V

AIA150

CAE Educational Facility Design Awards

Submissions Deadline: December 7, 2007

The CAE Educational Facility Design Awards program is a marketplace of ideas. Through this forum, the committee disseminates quality ideas on educational-facility planning and design to clients, architects, and the public. This awards program is an opportunity to engage in critical

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Programs
Fall Booktalk Series
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October 23
Alice Sparberg Alexiou on her work, *Jane Jacobs: Urban Visionary*
skyscraper.org/programs

evaluation and experimentation in the context of clients and their needs. Visit www.aia.org/cae.

AIA150

The American Institute of Architecture Students' (AIAS) 2nd Annual National Student Design Competition

Deadline: November 5, 2007

Developed for advanced students, this competition will challenge participants to design a pediatric outpatient rehabilitation center and family support facility utilizing architectural aluminum building products and systems. For more information, visit www.aias.org/kawneer.

Palladio Awards

Deadline: November 15, 2007

This program recognizes individual designers and/or design teams whose work enhances the beauty and humane qualities of the built environment through creative interpretation or adaptation of design principles developed through 2,500 years of the Western architectural tradition. For more information, call 718/636-0788 or visit www.palladioawards.com.

Venice Lagoon Park

Deadline: November 15, 2007

In celebration of the magazine's 10th anniversary, 2G launches an international ideas competition. This theoretical initiative is intended as a reflection on the contemporary metropolis that pays attention to the tension between global interests and local needs. For more information, visit www.2Gcompetition.com.

Califia Sketchbook Design Competition

Deadline: December 1, 2007

The purpose of developing the Califia Sketchbook Design Competition is to express what life will be like in Califia, a proposed next-generation ecocity. People worldwide are invited to enter a conceptual sketch conveying their view of "slices-of-life" within Califia, revealing smarter ways of building, powering, and maintaining the urban fabric. For more information, visit www.greencenturyinstitute.org/tellmemore.html.

E-mail event and competition information two months in advance to elisabeth_broome@mcgraw-hill.com.

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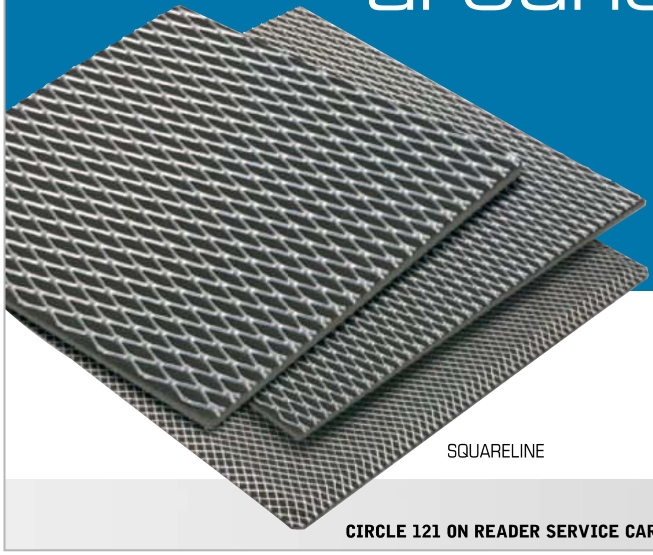

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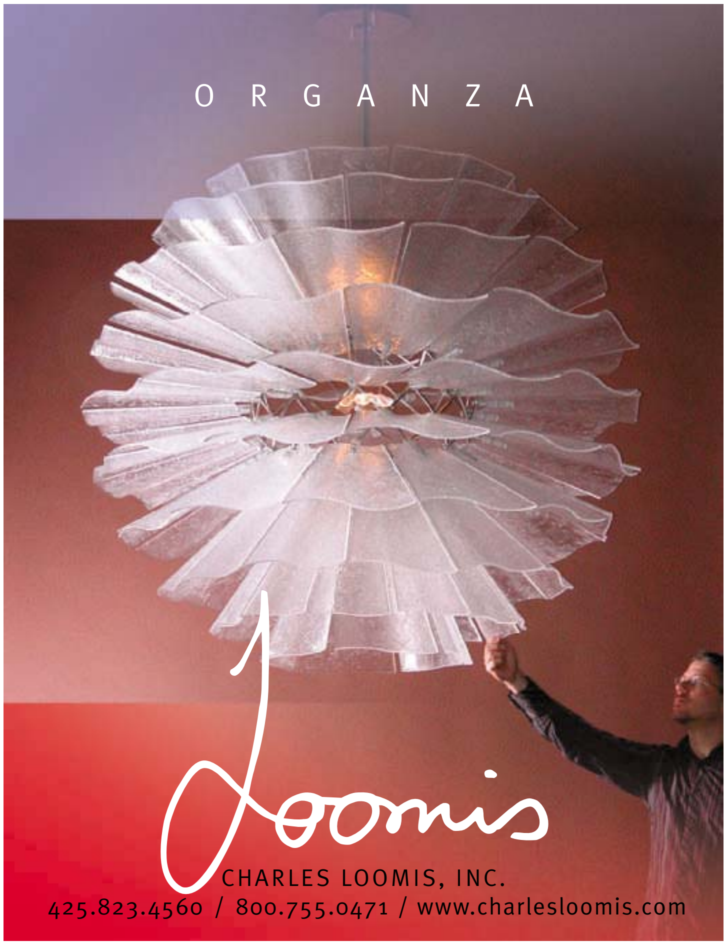

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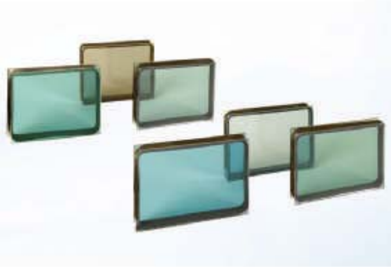

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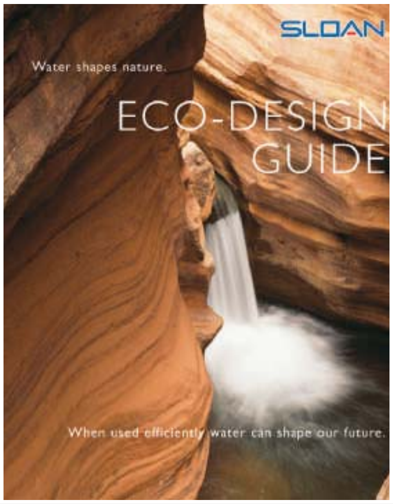
Eco-Design Guide

Sloan Valve Company



Sloan Valve Company's new "Eco-Design Guide" describes the sustainability challenge and how specifying water- and energy-efficient plumbing systems can make a significant difference. A product chart displays the water-savings estimates of Sloan's water-efficient products — including Waterfree Urinals, manual and sensor-operated Flushometers, pressure-assist flushing technology and 0.5-gpm faucets. Calculations of potential savings, based on number of uses, fixture type, and flow rate and duration, help substantiate water-efficient fixture purchases.

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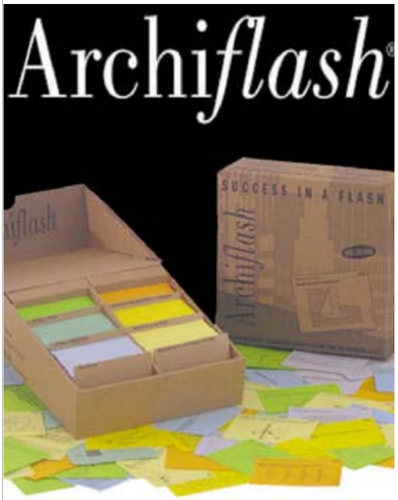

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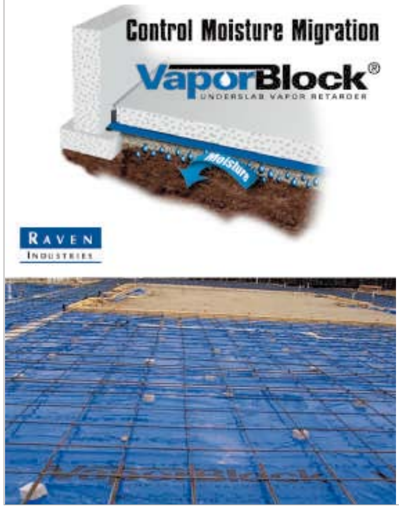

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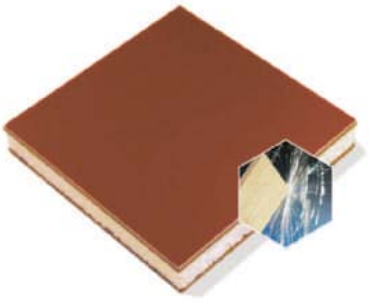

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www.Kawneer.com
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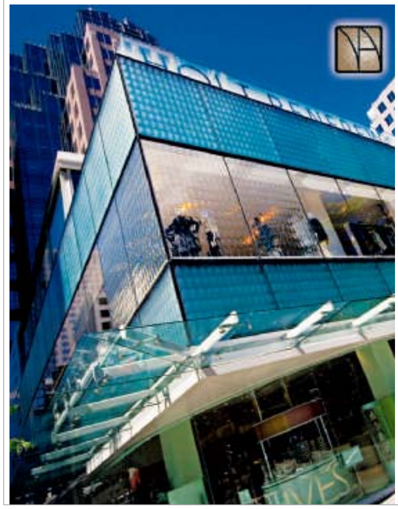
Convex Glass Pillows

Nathan Allan Glass Studios Inc.



Convex Glass was produced and developed with the renowned architectural firms of Janson/Goldstein and Front Inc, in NYC. Convex Glass is the first real 3D Glass produced in geometric type patterns. Both surfaces are shaped so that dimensional viewing can take place from either side of the glass. Convex Glass can be produced in 1/4-in., 3/8-in., 1/2-in., 5/8-in. and 3/4-in. single layered panels up to 8-ft.0-in. x 12-ft.6-in., and can be safety tempered as well. Rectangular, square, and circle shapes can be produced. A unique method of casting allows panels to "fit like a glove," enabling successful resin laminating.

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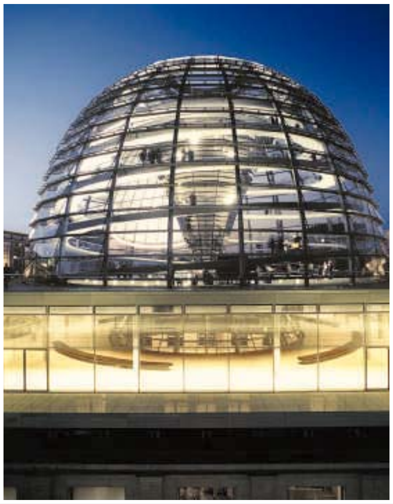

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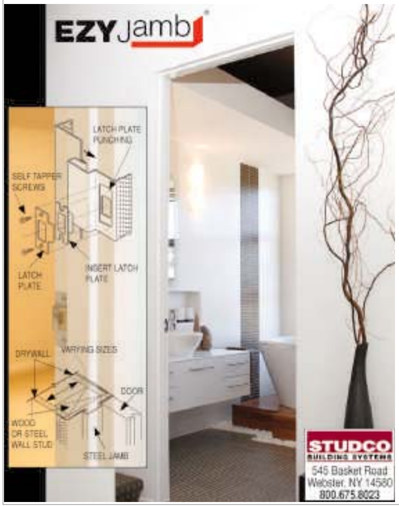
Trimless Doorframe

Studco Building Systems



Studco's EZY-Jamb trimless door frame system is a split-type jamb that combines visual appeal with strength and versatility. Components of the EZY-Jamb system are designed to promote the clean lines and inconspicuous detail desired for trimless door frames. Studco also offers a full range of other flush finish products that can be used to make your project a contemporary dream. Not only has the installer's dream been realized, but the architects dream has started. Fax number 585-265-6678 Email mail@studcosystems.com

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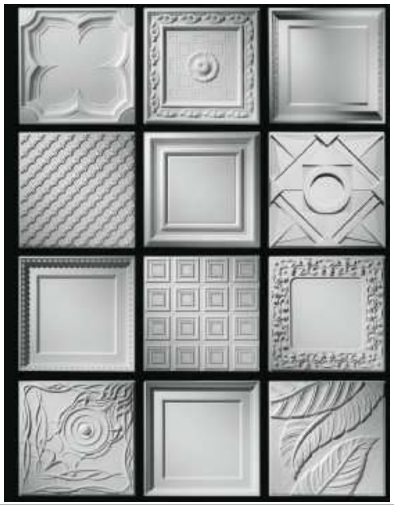
Ornamental Plaster Ceiling Tiles

Above View Mfg., By Tiles, Inc.



Above View ornamental plaster ceiling tiles are fabricated from a non-toxic, non-combustible, proprietary composition. They drop into any standard 15/16-in. T-Bar grid system. There are more than 50 standard designs, custom design work, and 1,300 custom colors and faux finishes available upon request.

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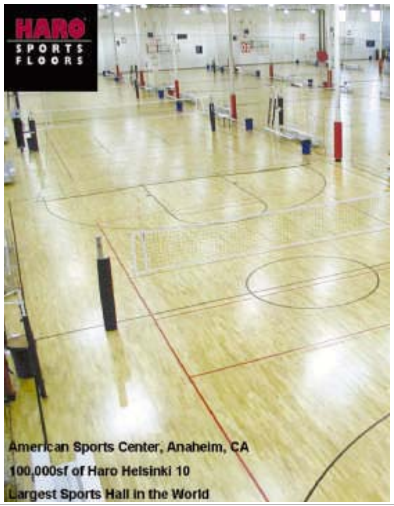
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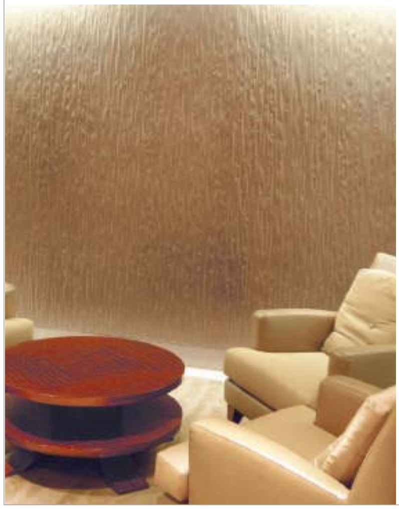
| Circle Reader Service #182

Vertical Surfacing

Gage Corporation, Intl.



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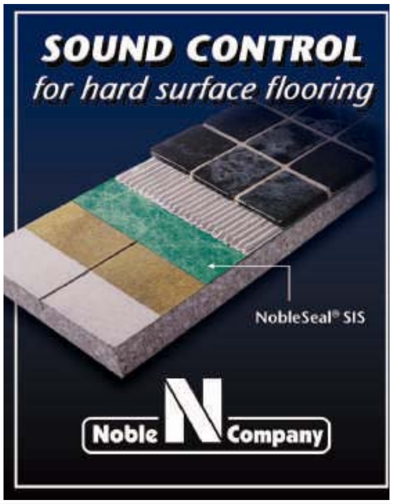
www.linetec.com

| Circle Reader Service #184

Reduce Impact Noise

Noble Company



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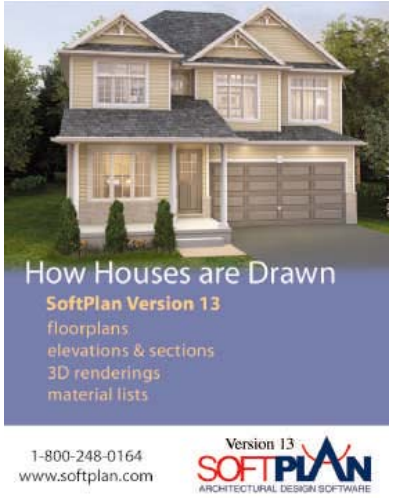

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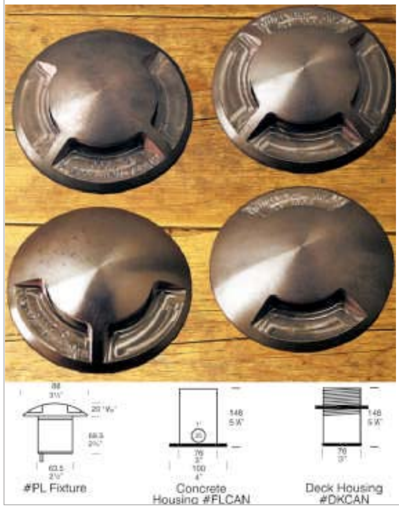

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Agenda at a glance:

Performative Architecture
-Branko Kolarevik, Haworth Chair in Environmental Design, University of Calgary, with Ali Malkawi, Director, Chan Center for Building Simulation and Energy Studies, University of Pennsylvania

Building Facades and Skins
-Advanced Facade Design, Marc Simmons, and Bruce Nichol, Front Inc.,
-William Zahner, president of A. Zahner Metals,

Transformative structures
-Chuck Hoberman, Hoberman Design

The Power of Design to Affect Transformation
-Gary Van Deursen, of Van Deursen Innovation and Design

Work in place: Case Studies of Innovative and High Performance Materials and Systems

Investigating the Art and Science of Glass and Light
-James Carpenter, principal of Carpenter Design Associates, and Davidson Norris, principals of Carpenter/Norris Consulting, Advanced Daylighting Systems

-Marilyne Andersen, PhD, Department of Architecture, at the Massachusetts Institute of Technology

Case Study: The Fulton Street Transit Center
-Andrew Whalley and Vincent Chang of Grimshaw Architects, with James Carpenter

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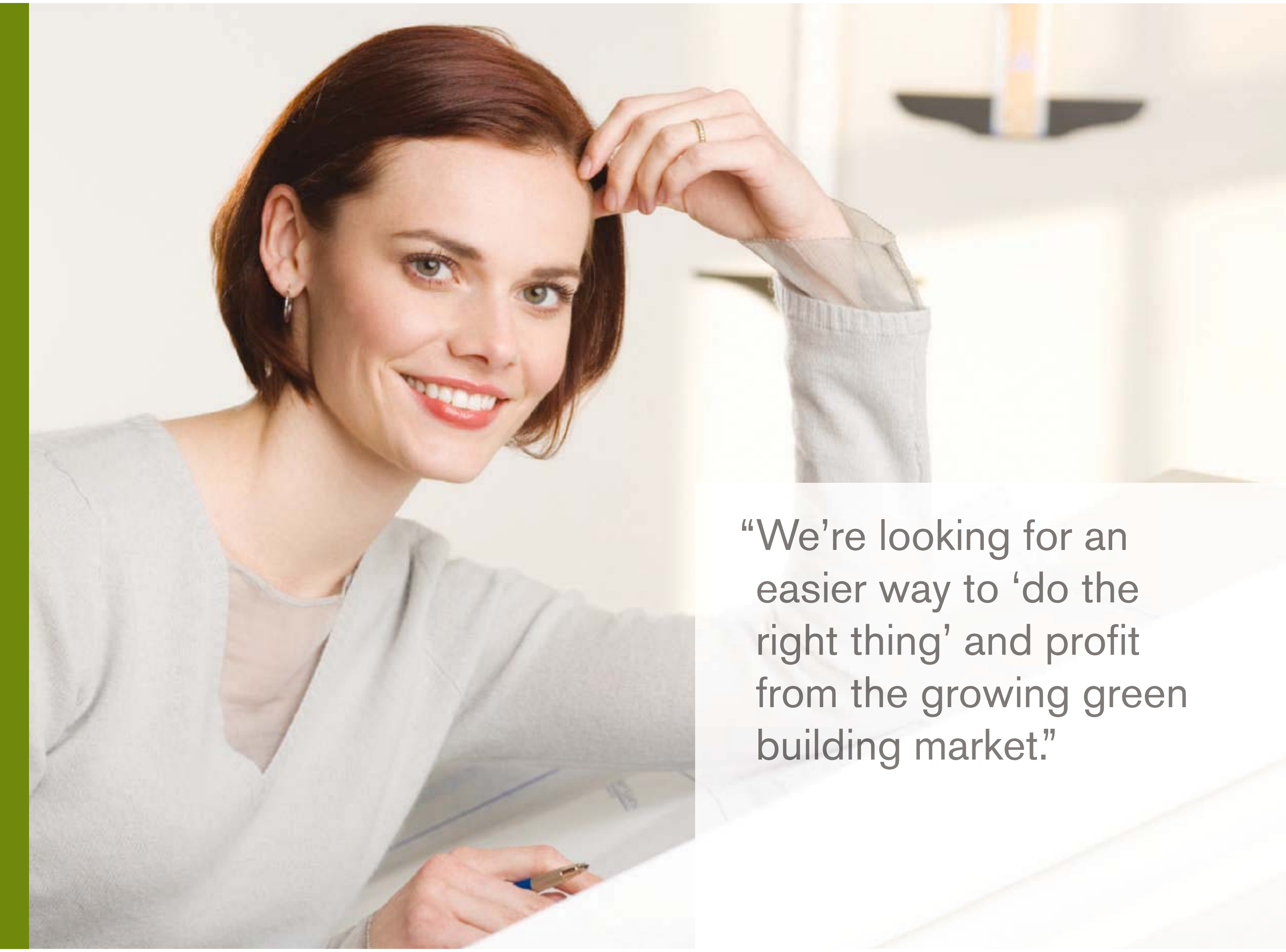

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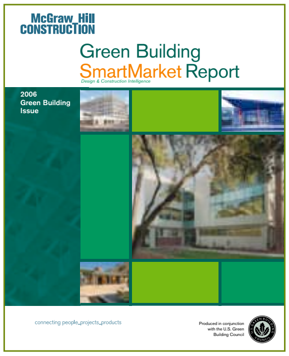

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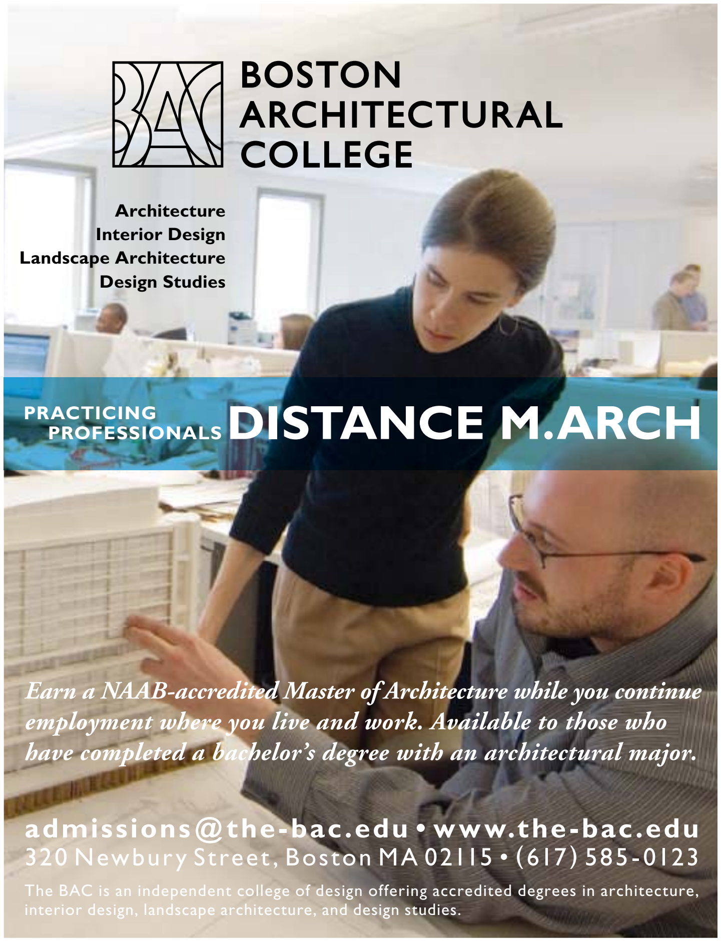

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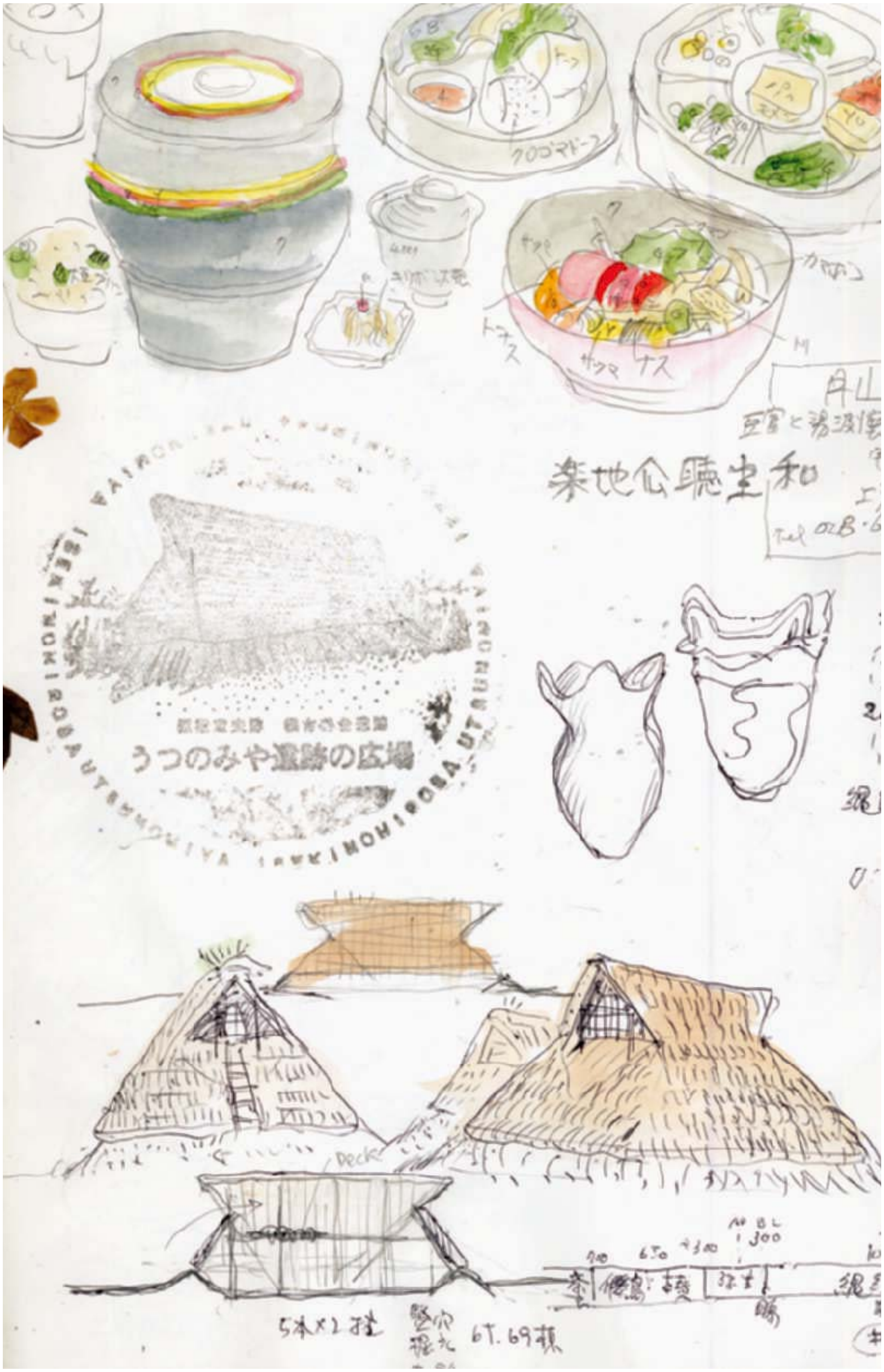


Food for thought

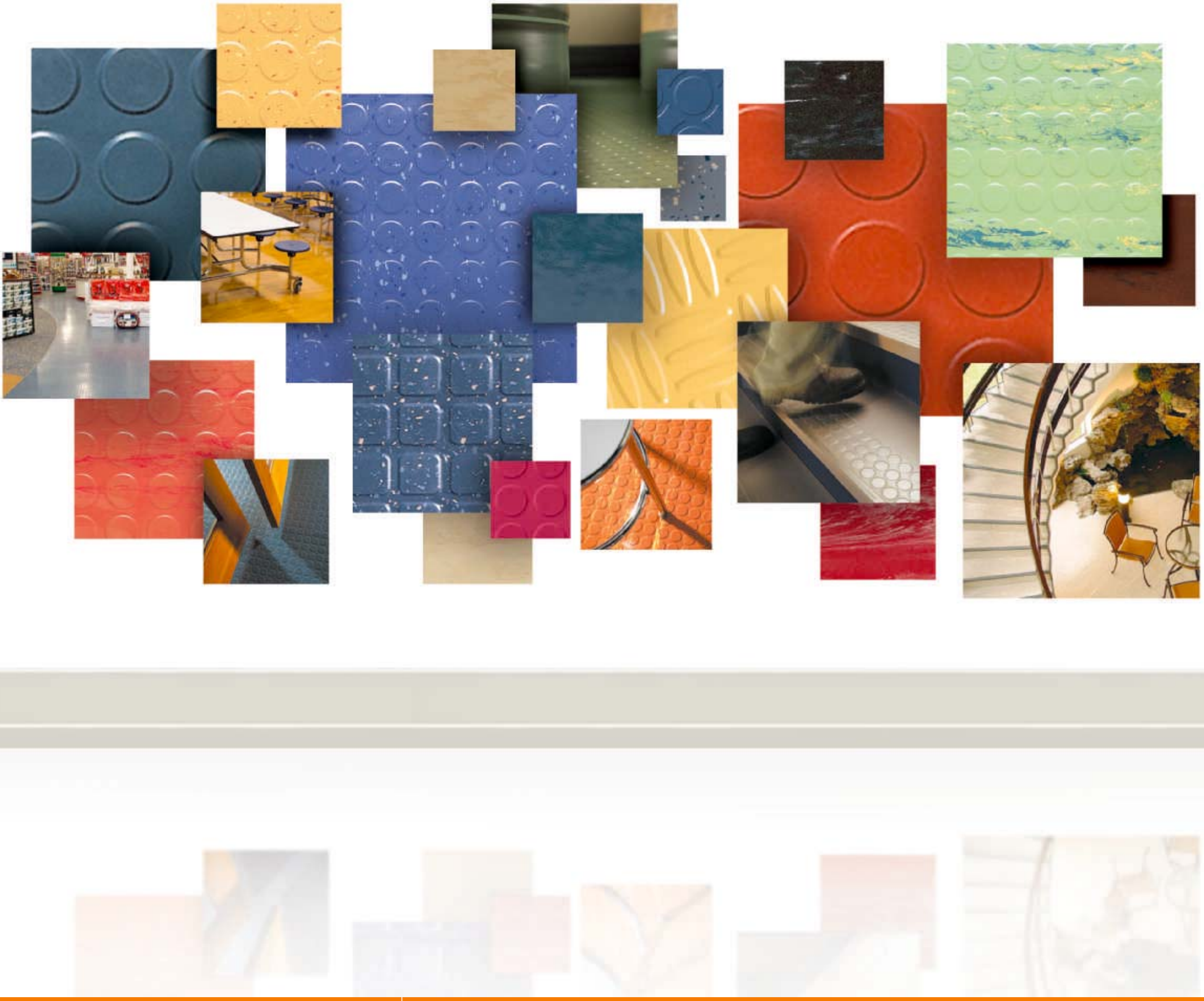
Kinya Maruyama carries a bound blank book with him almost everywhere. The Yokohama, Japan–based architect uses its pages to sketch buildings he visits, record design ideas, document his own projects' sites, and prepare notes for lectures. He makes entries almost daily, and refers to the activity as "training." Maintaining such a book, which functions as a travel log, diary, and scrapbook, is not only visual training, but is also a mental and spiritual endeavor, says Maruyama, founder of Atelier Mobile, one of several loosely affiliated Japanese firms known collectively as Team Zoo.

When Maruyama sketches in the book, he often captures his subject with a black-and-white line drawing, later adding watercolor accents, as he has done in this depiction of Jomon-era "pit dwellings" of thatch, timber, and earth.

The day in June 2006 that Maruyama visited the pit dwelling site in Utsunomiya, about 60 miles north of Tokyo, he enjoyed a meal at a local restaurant, creating a pictorial catalogue of its components on the upper half of the same page. Sketching food is much like documenting buildings, he explains. "When it is prepared with good materials and the presentation is done well, it looks like architecture."

Joann Gonchar, AIA

***Tateanashiki Jyukyo* (bottom) *and Tofu Kaiseki* (top), *Utsunomiya, Japan,* graphite, ink, and watercolor on paper, 2006.**



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